## Historic Properties Visual Impact Assessment: Addendum to Cultural Resources Evaluation

# Rail Tie Wind Project Albany County, Wyoming



Prepared for:

ConnectGen Albany County LLC

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#### 1 INTRODUCTION

At the request of ConnectGen Albany County LLC (ConnectGen), and in coordination with the Western Area Power Administration (WAPA), Tetra Tech, Inc. (Tetra Tech) has prepared this Historic Properties Visual Impact Assessment Addendum (Addendum) to the April 2020 Cultural Resources Evaluation Technical Report (Tetra Tech 2020a) developed for the Rail Tie Wind Project (Project). This Addendum was also developed to supplement the May 2020 Visual Impact Assessment (VIA) completed for the Project (Tetra Tech 2020b; Section 2.3) and relies upon the visibility analysis for Project components from that VIA. This Addendum is intended to provide reviewing regulatory agencies with information on potential visual impacts of the Project upon historic properties within the 10-mile Area of Potential Effect (APE). WAPA, in consultation with the Wyoming State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation as part of compliance with Section 106 of the National Historic Preservation Act (NHPA; 16 United States Code [USC] § 40 et seq.), has defined the Project APE as:

the area within which historic properties [as defined at 36 CFR 800.16(I)(1)] may sustain loss of integrity (as defined in 36 CFR 60.4) by alteration or destruction caused by the proposed Project, and it includes 1) horizontally, the proposed Project footprint, which entails the physical footprint of all Project facilities within an approximately 26,000-acre area where Project facilities could be built; and vertically a maximum depth of 15 feet for the construction of the wind turbine foundations and a maximum height of 675 feet for construction of wind turbines, and 3) a 10-mile zone from the proposed Project area boundary within which historic properties, where "setting" and/or "feeling" are determined critical to a property's NRHP eligibility may be present

The Addendum includes a detailed discussion of the methods used to identify the historic properties selected for review, a detailed discussion of the methods used to evaluate potential visual impacts to these properties, and an assessment of potential effects.

#### 1.1 Project Background

The Project is located in southeastern Albany County, Wyoming, and encompasses approximately 26,000 acres of ranchland on private and state lands near Tie Siding, Wyoming (Project Area; Figures 1 and 2). The Project would include up to 149 wind turbine generators (WTGs), each ranging between 3.0 to 6.0 megawatts (MW) in size, with a combined maximum generating capacity rating of 504 MW. The Project proposes to interconnect to the existing transmission system of WAPA via the Ault-Craig 345-kilovolt (kV) transmission line, which runs through the Project Area.

For construction planning and site optimization, the Project consists of two separate phases, each approximately 252 MW. Construction of the Project is expected to begin in 2021, and both phases could be fully operational by the end of 2022. As is common with large wind projects, the Project may require two years to fully construct. If additional time is required to facilitate construction, it is anticipated that the first 252 MW phase would be completed and fully operational by the end of

2022, and the second phase operational in 2023. Although the Project would be developed in phases, this Addendum analyzes full build-out of the Project.

#### 1.1.1 Wind Turbine Generators

Between 84 and 149 turbines would be installed for the Project. The total number of turbines would depend on the turbine model selected and final Project design. ConnectGen is currently considering several turbine models with generating capabilities between 3.0 MW and 6.0 MW each. Of the turbine models being considered by ConnectGen, the smallest model would be the General Electric Company (GE) 3.0 MW, and the largest would be the Siemens Gamesa 6.0 MW or the Vestas 5.6 MW. Each turbine, with associated foundations and equipment, would have a permanent physical footprint of approximately 0.1 acre and a vertical height of 500 feet to 675 feet depending on the turbine type selected.

This Addendum evaluated both turbine layout scenarios (Figures 1 and 2) based on the maximum number of representative 3.0 MW and 5.6 MW turbines being considered that could be observed from each key observation point (KOP) location. The Vestas 5.6 MW model was used as the maximum representative turbine height because it has a total turbine height that is higher than the Siemens Gamesa 6.0 MW model. A more detailed outline of the Project components reviewed as part of this Addendum is provided in the May 2020 VIA (Tetra Tech 2020b).

#### 2 METHODOLOGY

#### 2.1 Analysis Area and Assessment Approach

An initial assessment of potential visual impacts to cultural resources was completed as part of the April 2020 Cultural Resources Evaluation (Tetra Tech 2020a). The assessment included a review of all properties within the 10-mile Visual Analysis Area (referred to in this Addendum as the APE) that were listed on the National Register of Historic Places (NRHP). This Addendum to that document will serve as the basis for WAPA evaluation of cultural resources under the National Environmental Policy Act (NEPA) and under Section 106 of the NHPA for the proposes of evaluating the effects of the Rail Tie Wind Project transmission interconnection.

Subsequent to the initial assessment, it was determined through Section 106 coordination between WAPA and the Wyoming SHPO in April 2020 that a Programmatic Agreement (PA) be prepared (personal communication between Matt Blevins and Mary Hopkins, 2020a). The Wyoming SHPO concurred with the proposed APE for the visual impact assessment for cultural resources within the Project APE in a letter dated April 28, 2020. The Colorado SHPO concurred with the APE on June 26, 2020. This addendum presents an expanded analysis to assess all historic properties (structures, buildings, tribal in use resources eligible under NRHP Criteria A and/or C) where "setting" and/or "feeling" are determined critical to a property's NRHP eligibility, as stipulated in III.B.2 and II.C of the Final Draft Programmatic Agreement (Final Draft PA; WAPA 2020b).

Further coordination with WAPA resulted in direction that assessment should also consider known archaeological resources of potential traditional or religious cultural significance to Native American tribes as per the Final Draft PA. Other archaeological resources potentially eligible for listing to the NRHP under Criterion D are not evaluated in this analysis because setting and/or feeling is not pertinent to the eligibility evaluation of such resources under Section 106 of the NHPA. Effects from the Project on these resources may be evaluated under NEPA. Cultural resources identified by stakeholders and members of the public were also considered.

#### 2.2 Historic Property Identification

In March 2020, SWCA Environmental Consultants (SWCA), a third-party consultant to WAPA on the Project, completed a preliminary file search through both the Wyoming State Historic Preservation Office's Wyoming Cultural Records Office (WYCRO) and Colorado State Historic Preservation Office's Office of Archaeology and Historic Preservation (OAHP; WYCRO File Search numbers 1351 and 1353 and OAHP file search number 22628\_s) with the purpose of gathering information on all known, previously recorded cultural resources located within the 10-mile APE. SWCA then analyzed these cultural resource records to identify historic properties located within this APE that are eligible under NRHP Criteria A or C and where setting and/or feeling are known or likely characteristics contributing to their eligibility, including cultural resources of potential traditional or religious significance to Native American tribes, to compile a list of these resources for assessment of potential visual impacts. SWCA also considered agency and public comments to date regarding cultural resources of concern in the Project APE in compiling the list of resources for potential visual assessment. The following section provides a brief summary of the methods outlined by SWCA in their selection of KOPs.

The results of the file search conducted by SWCA indicated that a total of 478 previously recorded cultural resources are located within the APE (390 in Wyoming and 88 in Colorado). Of these, 9 are within the proposed Project Area, while the remaining 469 are within the 10-mile zone (SWCA 2020). This list of resources was then screened to identify historic properties to which the Project may pose visual effects using a two-part approach:

- Elimination of duplicate entries for the same resource to ensure the most recent eligibility classification was preserved, and the elimination of cultural resources meeting the following criteria:
  - a. those recommended or determined not eligible for NRHP nomination with consideration for whether they contain features of potential traditional or religious cultural significance to Native American tribes.
  - b. those that remain unevaluated for nomination to the NRHP and that contain no features of potential traditional or religious cultural significance to Native American tribes
  - c. those that have been recommended or determined eligible for nomination to the NRHP under Criterion D alone—or that are archaeological for those without noted criteria

- recommendations/determinations—and that contain no known features of potential traditional or religious cultural significance to Native American tribes.
- d. those that are recommended eligible under Criteria A and C for event or engineering or design, respectively, where setting is not important to their NRHP eligibility.
- 2) Elimination of remaining resources from Part 1 screening that did not fall within the viewshed of representative turbine locations developed for the Project APE as part of the May 2020 VIA (Tetra Tech 2020b). These resources included properties that may have boundaries intersecting the Project viewshed but no key features of visual impact concern in the viewshed.

The remaining properties were further screened to eliminate properties where KOP analysis would not be possible, such as properties fully located in trees (trees were not factored in the viewshed analysis) or properties falling into categories 1 and 2 described above.

This screening, as well as input received during public scoping or through discussions with consulting parties or stakeholders, resulted in identification of 22 historic properties and 2 unrecorded cultural resources (Tie Siding Cemetery; Reed's Rock) assessed from 21 locations (some representative of two historic properties at one location, that met the initial criteria for KOP assessment and selection. The following historic properties and unrecorded cultural resources and associated locations are identified as follows:

- 1. Tree Rock (48AB1067)
- 2. Cherokee Trail Location 1 (48AB1447)
- 3. Cherokee Trail Location 2 (48AB1447)
- 4. Dale Creek Bridge (48AB145)
- 5. Lincoln Monument (48AB153)
- 6. Overland Trail Segment 1(48AB157\_1)/Willow Spring Station (48AB359)
- 7. Overland Trail Segment 14 (48AB157\_14)/CMM JF-08 Extension, Union Pacific Railroad (48AB375)
- 8. VZW-A Overland Trail Segment (48AB157 225)
- 9. VZW-B Overland Trail Segment (48AB157 226)
- 10. Tie Siding Cemetery (Unrecorded)
- 11. Lodgepole Creek Trail 1 (48AB354\_1)/Lodgepole Creek Trail 12 (48AB354\_12)
- 12. Hermosa (Sherman) Tunnel (48AB453)
- 13. Barn at Oxford Horse Ranch (48AB527)
- 14. Cheyenne Pass Road (48AB543\_1)
- 15. Lincoln Highway 1920 (48LA117\_22)
- 16. Granite 2 (Prehistoric Hunting Blinds) (48LA207)
- 17. Cheyenne-Twin Mountains Wagon Road (48LA613)
- 18. Ames Monument (48AB97)
- 19. Willow Springs Bison Pound (48AB130)
- 20. Reed's Rock (Unrecorded)
- 21. Sherman Townsite (48AB42)

#### 2.3 NRHP Listing Criteria Review

Upon guidance from WAPA, Tetra Tech's architectural historian reviewed available, relevant information for each of the 22 historic properties and 2 unrecorded cultural resources to determine whether "setting" and/or "feeling" are determined critical to each property's NRHP eligibility for listing, not just whether they were eligible under NRHP Criteria A or C. Tetra Tech further refined the list of 22 historic properties and 2 unrecorded cultural resources, identifying those where setting/feeling were determined not critical for eligibility and removing them from the list. For properties where the nomination and evaluation forms did not discuss integrity of setting and feeling as aspects contributing to the eligibility, Tetra Tech's architectural historians applied professional judgment as to whether or not integrity of setting and feeling was a crucial factor.

Of the 22 historic properties and 2 unrecorded cultural resources that were considered, 3 properties, described below, were then eliminated from the KOP selection process per the screening criteria outline in 1)c above: elimination of "resources recommended or determined eligible for nomination to the NRHP under Criterion D alone—or that are archaeological for those without noted criteria recommendations/determinations—and that contain no known features of potential traditional or religious cultural significance to Native American tribes". These were resources identified during public scoping or through discussions with consulting parties or stakeholders. It is also important to note that no properties of traditional or religious cultural significance to Native American tribes have been identified to date.

<u>Willow Spring Station (48AB359)</u>, a historic stage station through which the Overland Trail passed through, was determined eligible for listing in the NRHP under Criterion D for its archaeological features and associated historic trash scatter.

<u>Granite 2 (Prehistoric Hunting Blinds)</u>, a stone dry laid masonry wall prehistoric hunting blind, is located along Interstate 80 and was determined not eligible for listing in the NRHP under Criterion D in 1979 and re-recorded in 2004 as not eligible. The site was re-recorded again in 2006 and recommended as eligible to the NRHP with SHPO concurrence under Criterion D in 2007.

<u>Willow Spring Bison Pound</u> (48AB130), a multicomponent prehistoric Native American bison kill site (Archaic to Late Prehistoric periods) that was recommended as eligible for listing in the NRHP under Criterion D based on the site's importance as a classic example of a bison kill site where this method was employed by successive groups of Native Americans for roughly two millennia.

Of the 21 historic properties remaining, 6 additional properties were ultimately eliminated from the KOP selection process, as described below.

<u>Reed's Rock</u>, an unrecorded resource associated with Ames Monument (48AB97) that was identified as being of specific interest to Wyoming SHPO is addressed as part of the Ames Monument KOP and was therefore not considered as an independent KOP in this analysis.

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The Sherman Townsite (48AB42), an archaeological site lacking any physical features or surficial integrity, would be assessed under Criterion D and per 1)c above, which states that those that resources that have been recommended or determined eligible for nomination to the NRHP under Criterion D alone—or that are archaeological for those without noted criteria recommendations/determinations—and that contain no known features of potential traditional or religious cultural significance to Native American tribes, will not be analyzed in this Addendum.

The Tie Siding Cemetery has not been formally evaluated for eligibility to the NRHP. The only information on the site's provenance is addressed in a thesis prepared in 2012 by Julian A. Sitters (2012), which states that the cemetery is associated with the town of Tie Siding, a supply depot for the Union Pacific Railroad as well as a rest stop for train travelers. As of 2012, the cemetery had 20 grave markers with dates ranging between 1893 and 2012, although public records indicate approximately 48 burials. Remote sensing technologies employed by the thesis author yielded data informing the locations of the majority of the remaining burials. This thesis focuses on the benefits of geophysical surveys; there is no information contained in the document to suggest that the site is significant under any of the NRHP criteria that would merit listing. Typically, cemeteries are not considered eligible for listing in the NRHP unless they meet Criteria Consideration D: a cemetery that derives its primary significance from graves of persons of transcendent importance, the age of the cemetery, the cemetery's distinctive design features, or its association with historic events (National Park Service 1995). It is not known who is interred at the Tie Siding Cemetery, the aboveground elements do not demonstrate distinctive design features, and its association with the town of Tie Siding is not considered an important historical event sufficient to merit listing. The available documentation does not indicate the Tie Siding Cemetery meets Criteria Consideration D and therefore it has been removed from further analysis.

The Dale Creek Bridge (48AB145), also known as Dale Creek Crossing, is a historic property that was listed in the NRHP in 1986; its period of significance is 1868 through 1901. In 1901, the bridge was replaced, abandoned, and then dismantled, leaving only the stone and masonry piers and abutments in place according to the 1986 NRHP nomination form. The feature is located on private property along the northern boundary of the Project Area. Although the significance criteria under which it is eligible is not specified in the original NRHP nomination form, it does state that the property is associated with the establishment of the Transcontinental Railroad. The evaluation of significance also states the intact hand-fitted stone piers and abutments exemplify an engineering achievement by Union Pacific Railroad laborers that enabled the them to cross the deep gorge and continue their tracklaying race west (Criterion C). As noted, the bridge itself no longer exists, all infrastructure having been removed, and consequently the bridge itself lacks physical evidence of its design, materials and workmanship that provided its unique sense of place. Because the remnants of the bridge are eligible under Criterion C, and the focus is on the engineering of those remnants per 1)d above, which states that those resources that are recommended eligible under Criterion C for

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engineering or design, respectively, where setting is not important to their NRHP eligibility, this resource is not carried forward for additional evaluation in this Addendum.

The Hermosa (Sherman) Tunnel (48AB453), was originally constructed in 1901 through 1902 as a single-track railroad tunnel along the Union Pacific Railroad during a period of grade changes in the Sherman Mountains when the alignment was moved south between Hermosa and Laramie. Its interior was relined in 1905 and then enlarged in 1918 to accommodate a second bore for westbound trains as a result of heavy rail traffic, at which time it became known as the Hermosa Tunnel. It was lined with concrete sometime prior to 1921, although its current appearance remains essentially the same as it did in 1918. It is eligible for listing in the NRHP under Criterion C as an engineering feat for its time as the original bore was constructed using hand labor, horses, and mules, and has endured to present day. The tunnel retains its physical integrity of engineering and construction per Criterion C. Per 1)d above, which states that those resources that are recommended eligible under Criterion C for engineering or design, respectively, where setting is not important to their NRHP eligibility, the Hermosa (Sherman) Tunnel is not carried forward for additional evaluation in this Addendum.

The Barn at Oxford Horse Ranch (48AB527), was constructed in 1887 and is one of the oldest and largest extant barns in Albany County, Wyoming. Per the site form, this historic property is listed in the NRHP under Criterion A for its association with the English thoroughbred horse breeding culture in Wyoming; more specifically evidence of the transplantation of the English upper class to the Rocky Mountain West; and under Criterion C as likely the county's best preserved example of vernacular architecture as influenced by late 19th century English cattle and horse ranchers, classifying as an agricultural manifestation of the "Georgian vernacular": tradition of England and the eastern U.S. It is located on one of the oldest ranches in the area, historically frequented by English and Scottish cattle barons who spent time on the ranch and brought their thoroughbred horse breeding and lavish way of life into the northwestern plains. The barn is one of several buildings constructed on the ranch in the late 1870s and 1880s.

The integrity of setting is relevant in the significance of the property only in that the barn was part of a localized horse ranch complex containing other structures along with the associated surrounding pastureland that was integral to that use. Integrity of feeling may be relevant to the significance of the property in that the barn represents its historic use in the context of a cattle baron ranch, which is conveyed through the barn's architecture. The barn's architecture invokes feeling, and its immediate surroundings convey its historic setting within the ranch complex. Because the focus of the nomination form is on the barn's architectural importance, per 1)d above, which states that those resources that are recommended eligible under Criterion C for engineering or design, respectively, where setting is not important to their NRHP eligibility, The Barn at Oxford Horse Ranch is not carried forward for additional evaluation in this Addendum.

Table 1 in Section 3 outlines the 13 KOP locations (representing 15 historic properties) evaluated in this Addendum. Locations of each of the KOPs are shown in Figure 3.

#### 2.4 Field Photography

A field visit was conducted between June 12 and 14, 2020, to capture photography at each of the KOP locations identified in Table 1 (with the exception of Ames Monument, 48AB97, which was documented previously in the May 2020 VIA [Tetra Tech 2020b]). At each KOP location, a panorama (an overlapping series of photos) was captured, as were several representative photos of the resource itself and surrounding area. Panoramas were taken from the historic property at each KOP in the direction of the proposed Project turbine layouts to assess potential impacts to the resource's integrity aspects of setting/feeling. Photographs were captured using a digital single lens reflex (dSLR) camera. The camera was equipped with a fixed lens with a 35 millimeter (mm) equivalent focal length of 53.55 mm to maintain a consistent field of view across photographs taken. A submeter GPS receiver was used to record the latitude, longitude, elevation, date, and time of each photo point location.

The precise location of potential KOPs identified in desktop analysis (which included a review of satellite imagery) were refined during field visits and their final locations set to assess potential visual impacts to the resource's integrity including aspects of setting/feeling.

During the field effort, it was noted that two KOP locations, Cheyenne-Twin Mountains Wagon Roads (KOP 17) and Lodgepole Creek Trail A (KOP 10) were located along private roads and were not publicly accessible. Due to the inaccessibility of these KOP locations, field photography could not be obtained.

#### 2.5 KOP Assessment

The methodology for the assessment of visual impacts to historic properties followed the guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the Bureau of Land Management (BLM; BLM and SHPO 2014; Final Draft PA 2020). The criteria provided below were used to further assess the potential visual impact of the Project on those cultural resources that would be carried forward for analysis of visual effects from the list of historic properties represented by the 19 KOP locations originally identified.

To evaluate the potential level of modification to the existing landscape features from development of the Project, visual contrast ratings (VCR) were prepared using a form adapted from the BLM's VCR Worksheet (Form 8400-4) for each of the KOP locations where photography was captured. The VCR forms are provided as Appendix A. The level of visual contrast introduced by an action can be measured by changes in form, line, color, and texture. The greater the difference between these character elements found within the landscape and the Project components, the more apparent the level of visual contrast becomes, which typically increases perceived contrast. General criteria are used by the BLM when rating the degree of contrast, and they were used to describe the visibility/noticeability of the Project components (BLM 1986).

In addition, and as outlined in Section V.D. of the 2014 State Protocol, the recommendation of Project effects depends on the scale on which the project elements (turbines) will dominate the setting/feeling or attract the attention of the casual observer, thus creating a visual contrast. The individual VCR forms are provided in Appendix A. As outlined in the 2014 State Protocol, the VCR forms were utilized in the following manner to determine Project effects of the Project on the historic property KOPs (BLM and SHPO 2014; Final Draft PA 2020).

- § If the proposed project elements (turbines) will not be seen and/or there will be no contrast to the setting/feeling of the historic property, or if the historic property no longer retains integrity (i.e. is no longer extant), a recommendation of No Historic Property Affected was made.
- § If the turbines will tend to be seen but not dominate the setting/feeling or attract the attention of the casual observer because the proposed Project resulted in a weak contrast rating, a recommendation of No Adverse Effect was made.
- § If the turbines will tend to be dominant, the setting/feeling and result in a moderate or strong contrast rating, a recommendation of Adverse Effect was made.
- § If the turbines will diminish the integrity for historic properties eligible under NRHP Criteria A and/or C where "setting" and/or "feeling" are determined critical to a property's NRHP eligibility, a recommendation of Adverse Effect was made.
- § If the historic property cannot be confirmed as extant, a recommendation of Undetermined was made with the additional recommendation of field verification prior to a final determination being made.

The results of the recommendation of effect for each historic property based on the KOP assessment are provided in Table 1 and are discussed in Section 3 below.

#### 3 RESULTS

This section outlines the assessment of visual impacts from development of the Project on each of the 13 historic properties that were ultimately identified for analysis. As discussed in Section 2, analysis from each KOP included the following components:

- § Characterizing the existing landscape and visual resource conditions for the historic property or properties from the KOP
- § Determining the expected or potential visibility of Project facilities for each historic property from the KOP
- § Rating the degree of visual contrast created at each historic property by the Project for both minimum and maximum turbine height scenarios as assessed from the KOP
- § Evaluation of aerial imagery for trail segments to determine whether visible trail remnants remain on the ground surface

Table 1 provides a summary of the level of contrast (i.e., strong, moderate, weak, none) for each historic property. Photographs of existing conditions are included in the VCR Forms in Appendix A. The analysis summary and assessment of effect for each historic property from its KOP location are presented below in Section 3.1. It should be noted that the assessments were based on the

environmental conditions that were experienced during the field visit. Typically, these conditions were clear and sunny (unless otherwise noted). It is anticipated that contrast would be reduced or not be perceived or visible under certain atmospheric conditions such as haze or fog.

It is important to note that during the field effort, two KOP locations, Cheyenne-Twin Mountains Wagon Road (KOP 12) and Lodgepole Creek Trail Segment 1 (KOP 8), were located along private roads and were not publicly accessible. For that reason, no field photographs were taken. Given its location approximately 0.45 mile east, Lodgepole Creek Trail KOP 9 was used as a proxy for Lodgepole Creek Trail KOP 8, and these locations were ultimately combined into one assessment. For Cheyenne-Twin Mountains Wagon Road KOP 12, it was determined that this resource would be analyzed via desktop analysis but would not include a photographic assessment or contrast rating review.

Table 1: Visual Impact Assessment Results and Recommended Determination of Effect for Historic Property Key Observation Points

KOP No. <sup>1</sup>	KOP Name	Site Number	Approximate Distance to Nearest Min Turbine/ Max Turbine (miles)	NRHP Eligibility Status and Date Recorded <sup>2</sup>	NRHP Eligibility Criteria <sup>3</sup>	Historic Property Integrity <sup>4</sup>	Contrast Rating⁵		
							Minimum Turbine Height Scenario (3.0 MW)	Maximum Turbine Height Scenario (5.6 MW)	Recommended Determination of Effect to Historic Property <sup>6</sup>
1	Tree Rock	48AB1067	3.2/3.4	Recommended Eligible; Rerecorded 2016	A	Intact	Weak	Weak	No Adverse Effect
2	Cherokee Trail (Location 1)	48AB1447	2.2/2.2	Overall Trail Recommended Eligible; Segment location undocumented	A	Field Confirmation Needed.	Strong	Strong	Undetermined Effect
3	Cherokee Trail (Location 2)	48AB1447	3.9/4.6	Overall Trail Recommended Eligible; Segment location undocumented	A	Field Confirmation Needed.	Strong	Strong	Undetermined Effect
4	Lincoln Monument	48AB153	7.2/7.4	Recommended Eligible	A/C	Intact/Relocated	Weak	Weak	No Adverse Effect
5	Overland Trail, Segment 1	48AB157_1	0.9/0.7	Recommended Eligible; 1986; Update IMACS 1995	Not Indicated; Assume A	Described as Swale 1986/Field Confirmation Needed	Strong	Strong	Undetermined Effect
6	Overland Trail, Segment 14; CMM-JF-08 Extension (Union Pacific Railroad	48AB157_14; 48AB357	1.7/1.8	Recommended Eligible 1993; Update IMACS 1990; Update IMACS 1995/IMACS 1985; Update 1999 Segment non- contributing	Not Indicated; Assume A/A	Described as Swale or Trace 1993/Field Confirmation Needed/ Described as gravel road on top of old grade	Strong	Strong	Segment 14 – Undetermined Effect; UPRR – Undetermined Effect
7	Overland Trail Segment 225; Overland Trail Segment 226	48AB157_225; 48AB157_226	0.3/0.3	Recommended Eligible 2009	A	Both segments - Photo documented swales and ruts 2009	Strong	Strong	Segment 225: Adverse Effect Segment 226: Adverse Effect

	KOP Name	Site Number	Approximate Distance to Nearest Min Turbine/ Max Turbine (miles)	NRHP Eligibility Status and Date Recorded <sup>2</sup>	NRHP Eligibility Criteria <sup>3</sup>	Historic Property Integrity <sup>4</sup>	Contrast Rating <sup>5</sup>		
KOP No. <sup>1</sup>							Minimum Turbine Height Scenario (3.0 MW)	Maximum Turbine Height Scenario (5.6 MW)	Recommended Determination of Effect to Historic Property <sup>6</sup>
8/9	Lodgepole Creek Trail 1; Lodgepole Creek Trail 12	48AB354_1; 48AB354_12	8.3/8.5; 8.2/8.4	Overall Trail Recommended Eligible; Segment 1 non-contributing, IMACS 1995; Re- recorded 2004 as non-contributing. SHPO determined contributing in 2005. Segment 12 contributing 2008, SHPO concurrence 2010, 2013.	A	Segment 1 – currently used as modern 2-track road. Segment 12 - ruts and swale visible, also used as modern 2-track road.	None	Weak	Segment 1 – No Adverse Effect. Segment 12 - No Adverse Effect.
10	Cheyenne Pass Road	48AB543_1	3.1/3.2	IMACS 1987, Segment Not Eligible; 1995 Re-recorded, Segment Recommended Eligible	Not Indicated/ Assume A	Ruts Visible 1995; Field Confirmation Needed due to nearby Quarry	Moderate	Moderate	Undetermined Effect
11	Lincoln Highway 1920	48LA117_22	8.4/8.5	Segment Recommended Eligible 1997; Re- Recorded 2004, Segment Recommended Eligible	Not Indicated/ Assume A/C	Paved Road Deteriorated but Retains Integrity of Design and Workmanship per 2004 Site Form	Weak	Weak	No Adverse Effect
12	Cheyenne-Twin Mountains Wagon Road	48LA613	8.4/8.4	IMACS 1987, Segment Recommended Not Eligible; Re- Recorded 2011, Segment Recommended Eligible; SHPO Concurrence 2011	A	2-track and Swale Visible 2011 (Site not accessible- private road.)	NA	NA	No Adverse Effect



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			Approximate				Contrast Rating⁵		
KOP No. <sup>1</sup>	KOP Name	Site Number	Distance to Nearest Min Turbine/ Max Turbine (miles)	NRHP Eligibility Status and Date Recorded <sup>2</sup>	NRHP Eligibility Criteria <sup>3</sup>	Historic Property Integrity <sup>4</sup>	Minimum Turbine Height Scenario (3.0 MW)	Maximum Turbine Height Scenario (5.6 MW)	Recommended Determination of Effect to Historic Property <sup>6</sup>
13	Ames Monument	48AB97	1.2/1.6	NRHP Listed 1972; Re-Recorded 2013; NHL 2016	NRHP— A/C NHL—C	Intact	Strong	Strong	Adverse Effect

- 1 Location of KOPs shown in Figure 3.
- 2 Eligibility Status per site form(s) that includes setting and feeling.
- 3 Eligibility criteria as stated in site form(s).
- 4 Integrity as described in site form(s).
- 5 Visual Contrast Rating Forms for each KOP are included in Appendix A. NA = no VCR Form was completed.
- Recommendation based on guidance provided by the 2014 State Protocol (BLM and SHPO 2014) and as stipulated in III.B.2 and II.C of the Final Draft PA as outlined in Section 2.3 (WAPA 2020b).

## 3.1 Assessment of Effects Summary for Historic Properties from Key Observations Points

#### 3.1.1 KOP 1: Tree Rock (48AB1067)

Tree Rock is a historic property eligible for listing in the NRHP under Criterion A for its association with the Union Pacific Railroad and as an important landmark for travelers along the Lincoln Highway, U.S. Highway 30, and now Interstate 80. Tree Rock is a small, twisted, limber pine tree. growing out of a crack in a pre-Cambrian Era pink Sherman granite boulder. Tree Rock was visible to passers-by since the 1860s when the Union Pacific Railroad was built. In 1901, the railroad line moved south, but a wagon road remained. In 1913, the old Lincoln Highway was built by Tree Rock. Finally, in the 1960s, Interstate 80 was built and Tree Rock was preserved as a pullout in the median of the highway.

The distance to the nearest turbine would be 3.2 and 3.4 miles, respectively. Although wind turbines would be visible (twenty-five 3.0 MW or thirty 5.6 MW turbines) from this location, the existing human-made features associated with the interstate will continue to be dominant features on the landscape and diminish the setting and feeling associated with this resource. The Project would be visible but appear as a subordinate feature in the landscape. Foreground elements would draw viewer attention while the visible elements of the Project lack conspicuity. As such, the Project would introduce weak contrast for both turbine height scenarios.

The current review concludes that views of the wind turbines are sufficiently weakened by the human-made features already surrounding the historic property (Interstate 80, electric transmission lines, electric distribution lines, homes, and roads) and will not dominate the existing setting. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014) and III.B.2 and II.C of the Final Draft PA, development of the Project will result in No Adverse Effect on Tree Rock. Additional details of this assessment are provided in the VCR Form for KOP 1 in Appendix A.

#### 3.1.2 KOP 2: Cherokee Trail (Location 1) (48AB1447)

Cherokee Trail (Location 1) could not be relocated during field photography at the originally recorded location provided by SHPO; however, a representative KOP location was chosen approximately 0.2 mile northwest of the feature along U.S. 287 to represent the closest public viewing point. This portion of the Cherokee Trail is a segment of the southern branch of the Cherokee Trail, which has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation because immigrants and settlers used the trail as they traveled to California during the Gold Rush period.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint (2.2 miles) and their height above the

horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the color of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines contrasts with the strong horizontal lines in the existing view. Addition of the wind turbines introduces a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., residences, fences, electric transmission line towers, and communications infrastructure) are visible in the middleground and background in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines than the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbines for both layouts to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

While the southern branch of the Cherokee Trail has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation (immigrants and settlers used the trail as they traveled to California during the Gold Rush period), there is no documentation of the segment associated with KOP 2. The documentation provided in Site Form 48AB1447 is for a segment of the Cherokee Trail (Segment 188) that lies approximately 33 miles southwest of KOP 2. Documentation of Segment 188 of the Cherokee Trail indicates that it lacks integrity and may lie under State Route 230 and Boswell Road (FSR 526).

Observations made during field photography and a desktop evaluation of Cherokee Trail at Location 1 (KOP 2) did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Cherokee Trail segment exhibits integrity prior to a visual impact determination being made.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into the historic property's existing landscape. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Cherokee Trail (Location 1). However, the location and integrity of this historic property need to be confirmed in the field. If this trail segment is not extant, there would be no effect on a historic property at this location. At

present the Project effect is Undetermined. Additional details of this assessment are provided in the VCR Form for KOP 2 in Appendix A.

#### **3.1.3 KOP 3: Cherokee Trail (Location 2) (48AB1447)**

Cherokee Trail (Location 2) could not be relocated during field photography at the originally recorded location provided by the SHPO; however, a representative KOP location was chosen along the feature just north of its intersection with Sportsman Lake Road to reflect the closest public viewing point. This portion of the Cherokee Trail is a segment of the southern branch of the Cherokee Trail, which has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation because immigrants and settlers used the trail as they traveled to California during the Gold Rush period. The property is also eligible for listing under Criterion D because the site has proven to contain historic and prehistoric artifacts associated with the Cherokee Nation.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint (3.9 and 4.6 miles, respectively), and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the color of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and proximity of the Project. The vertical line of the wind turbines contrasts with the strong horizontal lines in the existing view. Addition of the wind turbines introduces a new industrial type use to a rural landscape setting. No other structures appear in this area, which would make the turbines more pronounced. The proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbines for each layout to the viewpoint the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

While the southern branch of the Cherokee Trail has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation (immigrants and settlers used the trail as they traveled to California during the Gold Rush period), there is no

documentation of the segment associated with KOP 3. The documentation provided in Site Form 48AB1447 is for a segment of the Cherokee Trail (Segment 188) that lies approximately 28 miles southwest of KOP 3. Documentation of Segment 188 of the Cherokee Trail indicates that it lacks integrity and may lie under State Route 230 and Boswell Road (FSR 526).

Observations made during field photography and a desktop evaluation of Cherokee Trail at Location 2 (KOP 3) did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Cherokee Trail segment exhibits integrity prior to a visual impact determination being made.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into the historic property's existing landscape. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Cherokee Trail (Location 2). However, the location and integrity of this historic property need to be confirmed in the field. If this trail segment is not extant, there would be no effect on a historic property at this location. At present the Project effect is Undetermined. Additional details of this assessment are provided in the VCR Form for KOP 3 in Appendix A.

#### **3.1.4 KOP 4: Lincoln Monument (48AB153)**

The Lincoln Monument was created by the renowned Wyoming sculptor and artist, Robert Russin, in 1959 to commemorate the highest point on the Lincoln Highway (U.S. Highway 30). It was moved to its current location at the Summit Rest Area along Interstate 80 in 1968. The monument is eligible for listing in the NRHP under Criterion A for its association with the national highway system and under Criterion C for its association with Robert Russin.

The distance to the nearest turbine would be 7.2 and 7.4 miles, respectively. Given the number of wind turbines potentially visible (sixty-seven 3.0 MW or forty-six 5.7 MW), existing human-made features (described below) would continue to be dominant features on the landscape. The Project elements may be noticeable in the far view but would appear as a subordinate feature in the landscape. Views likely would be blocked by structures associated with the existing Summit Rest Area and, if turbines are visible, they would be seen in context with security lighting, paved parking areas, flagpoles, and other modern structures. As such, the Project would create weak visual contrast for both turbine height scenarios.

The current review concludes that views of the turbines are sufficiently weakened by the distance from the Project and the existing modern features already present surrounding the historic property. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in No Adverse Effect on the Lincoln Monument. Additional details of this assessment are provided in the VCR Form for KOP 4 in Appendix A.

#### 3.1.5 KOP 5: Overland Trail, Segment 1 (48AB157-1)

Overland Trail Segment 1 is identified as a contributing segment of the overall linear resource, which was previously recommended as eligible for listing in the NRHP as a nationally significant stage and freight road. The original evaluation forms do not indicate under which NRHP criteria the trail is eligible, but it is assumed to be under Criterion A.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint (0.9 and 0.7 mile, respectively), and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the color of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines contrasts with the strong horizontal lines in the existing view. Addition of the wind turbines would introduce a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., residences, fences, electric transmission line towers, electric distribution lines, and communications infrastructure) are visible in the middleground and background in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbine scenarios to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

Observations made during field photography and a desktop evaluation of this trail segment did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Overland Trail segment exhibits integrity prior to a visual impact determination being made.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into both of the historic properties' existing landscapes. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and

II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Overland Trail Segment 1. However, the location and integrity of this historic property need to be confirmed in the field. If this trail segment is not extant, there would be no effect on a historic property at this location. At present the Project effect is Undetermined. Additional details of this assessment are provided in the VCR Form for KOP 5 in Appendix A.

### 3.1.6 KOP 6: Overland Trail, Segment 14 and CMM-JF-08 Extension (Union Pacific Railroad) (48AB157-14; 48AB357)

Overland Trail Segment 14 is identified as a contributing segment of the overall linear resource, which was previously recommended as eligible for listing in the NRHP as a nationally significant stage and freight road. The original evaluation forms do not indicate under which NRHP criteria the trail is eligible, but it is assumed to be under Criterion A.

This KOP location also contains a non-contributing segment of the historic Union Pacific Railroad (CMM-JF-08 Extension) that is eligible in its entirety for the NRHP under Criterion A for its association with the westward expansion of commerce. A gravel road was found to exist on the old railroad grade and it was identified that the physical integrity of this portion of the railroad grade has been impacted by the intrusion of major pipelines, It has also been bladed, graded, and gravel covered, as part of the road construction. The site has suffered a significant loss of physical and environmental integrity due to previous construction activities. It was recommended that this segment of the railroad be considered a non-contributing element and SHPO concurred in 1999.

The Project would introduce tall vertical elements into the landscape setting (sixty-five 3.0 MW turbines or forty-seven 5.6 MW turbines). However, it is anticipated that terrain in the foreground/middleground would screen lower portions of the wind turbines. Given their close proximity to the viewpoint (1.7 and 1.8 miles, respectively), and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky and dark green vegetation. Although the appearance of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines would contrast with the strong horizontal lines in the existing view. Addition of the wind turbines would introduce a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., power lines, fences, electric transmission lines, and communications infrastructure) are visible in the foreground and middleground in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbine scenarios to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

Observations made during field photography and a desktop evaluation of this trail segment did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Overland Trail segment exhibits integrity prior to a visual impact determination being made.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into both of the historic properties' existing landscapes. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Overland Trail Segment 14 and the historic Union Pacific Railroad (CMM-JF-08 Extension). However, the location and integrity of these historic properties need to be confirmed in the field. If this trail segment is not extant or UPRR location is determined as non-contributing, there would be no effect on the historic properties at this location. At present the Project effect is Undetermined for both. Additional details of this assessment are provided in the VCR Form for KOP 6 in Appendix A.

#### 3.1.7 KOP 7: Overland Trail Segments 225 and 226 (48AB157–225 and 226)

Overland Trail Segments 225 and 226 are identified as contributing segments of the overall linear resource, which was previously recommended as eligible for listing in the NRHP as a nationally significant stage and freight road under Criterion A.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint (0.3 mile), and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the appearance of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines would contrast with the strong horizontal lines in the existing view. Addition of the wind turbines would introduce a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., cell towers, fences) are visible in the

foreground and middleground in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbine scenarios to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic properties and would result in a strong visual contrast to the existing landscape of Overland Trail Segments 225 and 226. There is also the potential for the historic setting and feeling to be affected by the Project. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in an Adverse Effect on Overland Trail Segments 225 and 226. Additional details of this assessment are provided in the VCR Form for KOP 7 in Appendix A.

#### 3.1.8 KOP 8/9: Lodgepole Creek Trail Segments 1 and 12 (48AB354-1 and 12)

During the field effort, it was noted that KOP 8 for Lodgepole Creek Trail Segments 1 and 12 was located along a private road and was not publicly accessible. Therefore, given its location approximately 0.45 mile east of KOP 8, visual impacts for both Lodgepole Creek Trail segments 1 and 12 were assessed from KOP 9. Thus, these locations have ultimately been combined into one assessment.

The Lodgepole Creek Trail is eligible for listing in the NRHP under Criterion A for its association with transportation and settlement of the west. The route played a significant role as a transportation route from prehistoric to historic times, particularly during the mid-to late 1880s, when it served as a well-traveled wagon trail for settlers coming to the Wyoming frontier, connecting as it did with the Cherokee and Overland Trails. The site form documentation states that the Lodgepole Creek Trail Segment 1 no longer exhibits integrity and is currently used as a 2-track ranch road. Despite modern use as a modern ranch road, SHPO determined it to be a contributing segment of the trail despite regular use. Lodgepole Creek Segment 12 exhibits swale and rut features and has been determined a contributing segment to the overall eligibility of the Lodgepole Creek Trail.

The closest wind turbine would be 8.2 and 8.4 miles, respectively. There would be a very limited number of wind turbines potentially visible at this location (0 3.0 MW or 1 5.6 MW). No turbines would be visible under the minimum scenario. Under the maximum scenario, the existing topography and vegetation would continue to be dominant features on the landscape. Turbine visibility would occur for a short duration, if at all, as the viewer traveled along the trail. The Project would likely not attract attention but appear as a subordinate feature in the landscape. As such, the Project would introduce no visual contrast under the minimum turbine height scenario and weak contrast under the maximum turbine height scenario.

The current review concludes that only one turbine under one turbine height scenario (maximum) would be visible. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in recommended determination of No Adverse Effect for Lodgepole Creek Trail Segments 1 and 12, under the Project's minimum or maximum turbine height scenarios. Additional details of this assessment are provided in the VCR Form for KOP 8/9 in Appendix A.

#### 3.1.9 KOP 10: Cheyenne Pass Road Segment 1 (48AB543-1)

Segment 1 of Cheyenne Pass Road is a contributing segment of the overall linear resource, which has been determined eligible for listing in the NRHP (not indicated/assume Criterion A) as a historic territorial trail found on maps as early as 1866, running east through the town of Sherman, Wyoming, and on to Julesburg, Colorado. It is most appropriately eligible under Criterion A for its association with transportation as a historic trail in the region.

The Project would introduce tall vertical elements into the landscape setting. The closest wind turbine would be 3.1 and 3.2 miles, respectively. Given the number of wind turbines visible (one hundred twenty 3.0 MW or eighty-one 5.6 MW), the existing human-made features would likely become co-dominant features on the landscape, and the Project would attract attention and begin to dominate the landscape during the short viewing duration that the viewer would have as they travel along the highway. As such, the Project would create moderate visual contrast.

The wind turbines associated with the minimum and maximum turbine height scenarios would introduce the same level of visual contrast to the existing landscape setting. Given the taller wind turbines in the maximum turbine height scenario, more of the wind turbine structures would be visible extending above the horizon. The number of wind turbines and the motion of the rotor blades are not likely to be overlooked and may appear as a co-dominant feature. As such, the Project would create moderate visual contrast for both turbine height scenarios.

While this segment was visible on the ground in 1995, per the site records reviewed, a desktop evaluation of this trail segment did not definitively identify the segment extant on the landscape. Therefore, a follow up field visit would need to be conducted to demonstrate this Cheyenne Pass Road segment exhibits integrity prior to a visual impact determination being made.

The current review concludes that introduction of the turbines would begin to dominate the setting of this historic property and would result in a moderate visual contrast to the existing landscape of this historic property. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Cheyenne Pass Road. However, the location and integrity of this historic property need to be confirmed in the field. If this road segment is not extant, there would be no effect on a historic property at this location. At present the Project effect is Undetermined. Additional details of this assessment are provided in the VCR Form for KOP 10 in Appendix A.

#### 3.1.10 KOP 11: Lincoln Highway Segment 22 (48LA117-22)

Segment 22 of the Lincoln Highway is a contributing segment of the overall linear resource, which was recommended eligible for listing in the NRHP in 1997 (not indicated/assume Criteria A/C). The 2004 Wyoming Cultural Properties Form for Segment 22 indicates this segment of the Lincoln Highway retains integrity of setting, feeling, association, and location. While its physical integrity has been subject to deterioration and it remains unclear when the last modifications to this highway occurred, it still retains integrity of design and workmanship.

The closest wind turbine would be 8.4 and 8.5 miles, respectively. Given the limited number of wind turbines visible (one 3.0 MW, or two 5.6 MW), the existing human-made features including Interstate 80, power lines, the railroad, and rural development, would continue to be dominant features on the landscape and serve to deteriorate the setting and feeling of the resource. Also, given the short duration that the viewer would have as they travel along the road, the Project would likely not attract attention and may even be overlooked in the landscape. As such, the Project would create weak visual contrast for both turbine height scenarios.

The current review concludes that views of the wind turbines are sufficiently weakened by the human-made features already present surrounding Lincoln Highway 1920 Segment 22. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in No Adverse Effect on the Lincoln Highway Segment 22. Additional details of this assessment are provided in the VCR Form for KOP 11 in Appendix A.

#### 3.1.11 KOP 12: Cheyenne-Twin Mountains Wagon Road (48LA613)

The Cheyenne-Twin Mountains Wagon Road was determined eligible for listing in the NRHP under Criterion A based on the site's importance as a transportation route that allowed access to the ranching communities near the southern Laramie Range. In 2011, it was determined that a nearby segment of the of the Cheyenne-Twin Mountains Wagon Road, beyond the 10-mile limit of the current Project APE, retained enough integrity to remain eligible for listing.

During the field effort, it was noted that the location identified for KOP 12 was located along a private road and was not publicly accessible. Additionally, no nearby publicly accessible point

along the portion of the resource within the viewshed was available. Therefore, it was determined that this KOP would be analyzed via desktop analysis for a determination of effect but would not include a photographic assessment or contrast rating review.

The desktop analysis included a review of aerials overlaid with geographic information system (GIS) data of both the maximum and minimum turbine scenarios layouts relative to the KOP, as well as a review of the location using Google Earth ground view. The closest turbine to this KOP for both the minimum and maximum turbine layout scenarios is 8.4 miles. In addition, there are a very limited number of wind turbines potentially visible at this location (1 3.0 MW or 2 5.6 MW). The Google Earth ground view assessment at this KOP location indicates that the most direct view of the Project Area (facing northwest from the KOP) would be blocked topographically by the Twin Mountains. Given the large distance from the nearest proposed turbine and the very limited number of turbines potentially visible at this location, development of the Project will result in No Adverse Effect on the Cheyenne-Twin Mountains Wagon Road.

#### 3.1.12 KOP 13: Ames Monument (48AB97)

The Ames Monument was listed in the NRHP in 1972 for its association with the Ames Brothers and their role in transportation in the U.S through the construction of the transcontinental railroad. The monument itself is the work of H.H. Richardson, a prominent American architect, and Augustus Saint-Gaudens, a prominent American sculptor. The Ames Monument is a large pyramid constructed from a nearby granite source, Reed's Rock, and commemorates the highest elevation along the route of the First Transcontinental Railroad. The monument was designated as a National Historic Landmark in 2016 and is maintained as a Wyoming state historic site. The Union Pacific Railroad was relocated several miles to the south of the monument in 1901 and visual evidence of the railroad no longer exists near the site. As such, no assessment for the Union Pacific Railroad (48AB357) was conducted from KOP 13.

The Project would introduce tall vertical elements into the landscape setting. Numerous wind turbines would be visible at various distances across the full field of view, the closest wind turbines being located approximately 1 mile from the viewpoint. Visual simulations depicting both turbine height scenarios at this KOP are provided in the May 2020 VIA (Tetra Tech 2020b). Given their close proximity of the wind turbines to the viewpoint (1.2 and 1.6 miles, respectively), the turbines would appear as dominant features within the landscape. The lower portion of the structures would be backdropped by rangeland and distant mountain ranges, but the upper portions of the structures would be skylined. The white color of the wind turbines would contrast against the blue sky. Contrast would become more apparent during certain times of the day, for example during sunset when the wind turbines are backlit, and they may appear silhouetted against the sky. The motion of the wind turbine blades would also attract viewers attention. The perceived scale of the wind turbines would diminish as distance between the viewer structures increases. Wind turbines in the middleground would also be partially to mostly screened by intervening terrain in the foreground, with the exception of a small portion where the valley is visible. In this instance more of the wind turbine structures would be visible. Although other vertical human-made features (i.e.,

distribution line, communication tower) are visible in the foreground, the number and scale of the wind turbines visible would be much larger and become a focal point within the view. The proximity of the wind turbines scenarios to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape would cause the Project to appear as a dominant feature within the view. As such, the Project would introduce strong visual contrast.

Although the closest wind turbines associated with the maximum turbine height scenario are located approximately 1 mile farther away from the viewpoint than the wind turbines associated with the minimum turbine height scenario, the maximum turbine height scenario would be approximately 175 feet taller and would introduce the same level of visual contrast to the existing landscape setting. Several wind turbines would be visible in the foreground. The close proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a dominant feature within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast to the existing landscape of the Ames Monument National Historic Landmark. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in an Adverse Effect on the Ames Monument National Historic Landmark. Additional details of this assessment, as well as the visual simulations developed for this KOP as part of the May 2020 VIA (Tetra Tech 2020b), are provided in the VCR Form for KOP 13 in Appendix A.

#### 4 SUMMARY AND RECOMMENDATIONS

The results of the assessment of visual impacts from 13 KOPs to the 15 associated historic properties from development of the Project indicate that that the Project will result in an Adverse Effect to three historic properties within the APE for both turbine height scenarios (Table 1). The assessment also resulted in a determination of No Adverse Effect for six historic properties, and Undetermined Effect for six historic properties (Table 1).

Tetra Tech recommends that further consultation between WAPA and the Wyoming SHPO and other consulting parties should be conducted to discuss potential avoidance and minimization measures to address the historic properties that would be adversely affected by development of the Project. Potential avoidance and minimization measures to address potential visual impacts from the Project, including Environmental Protection Measures outlined by ConnectGen, are provided in the May 2020 VIA (Tetra Tech 2020b).

For those historic properties for which the Project was found to have an Undetermined Effect, additional research in the form of field verification with landowner permission would be needed to

establish the integrity of these historic properties in order to understand the potential visual impacts of the Project on them.

For those historic properties for which the Project was found to result in No Adverse Effect or No Historic Property Affected, no further action is recommended.

#### 5 LITERATURE CITED

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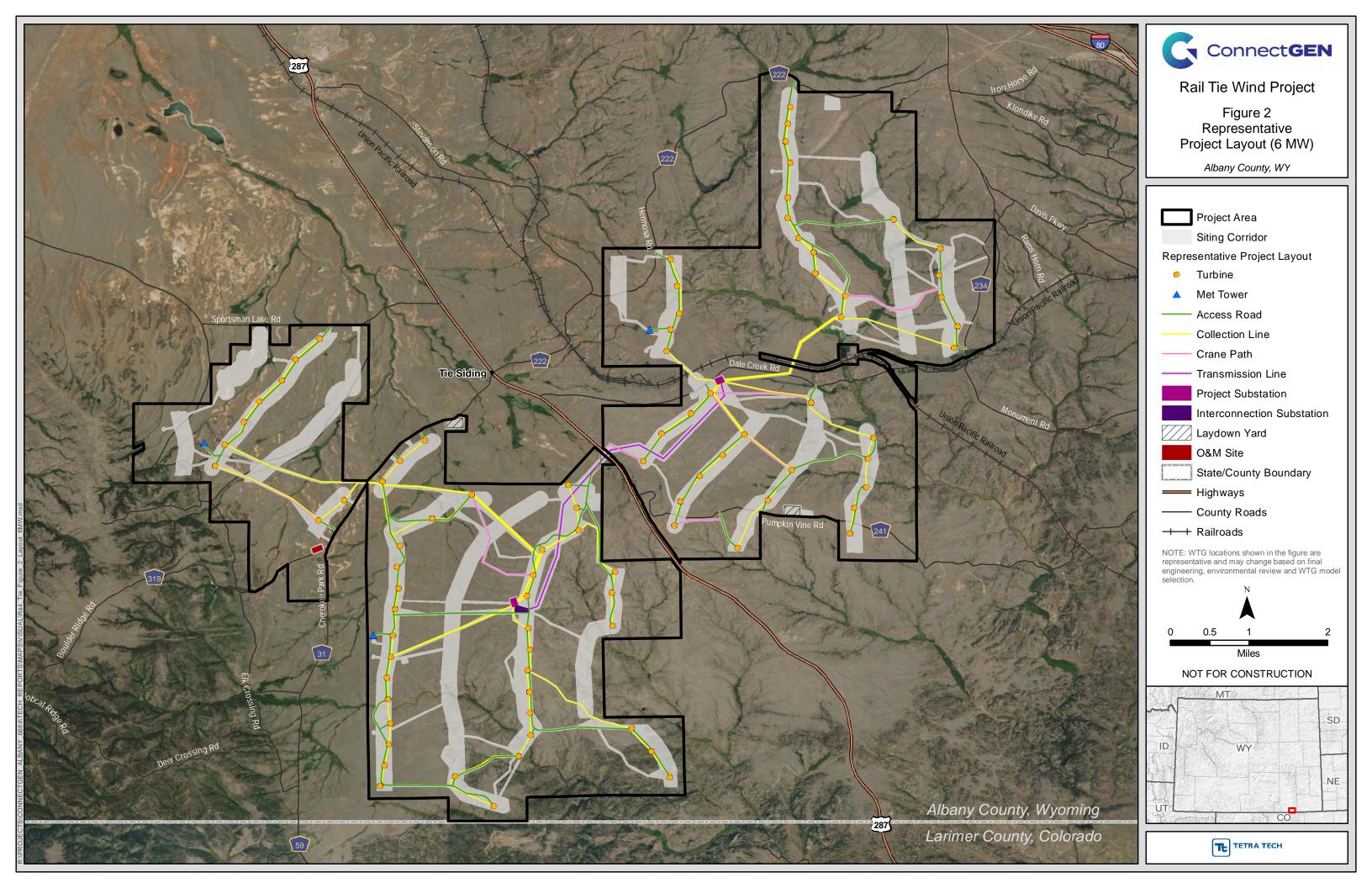
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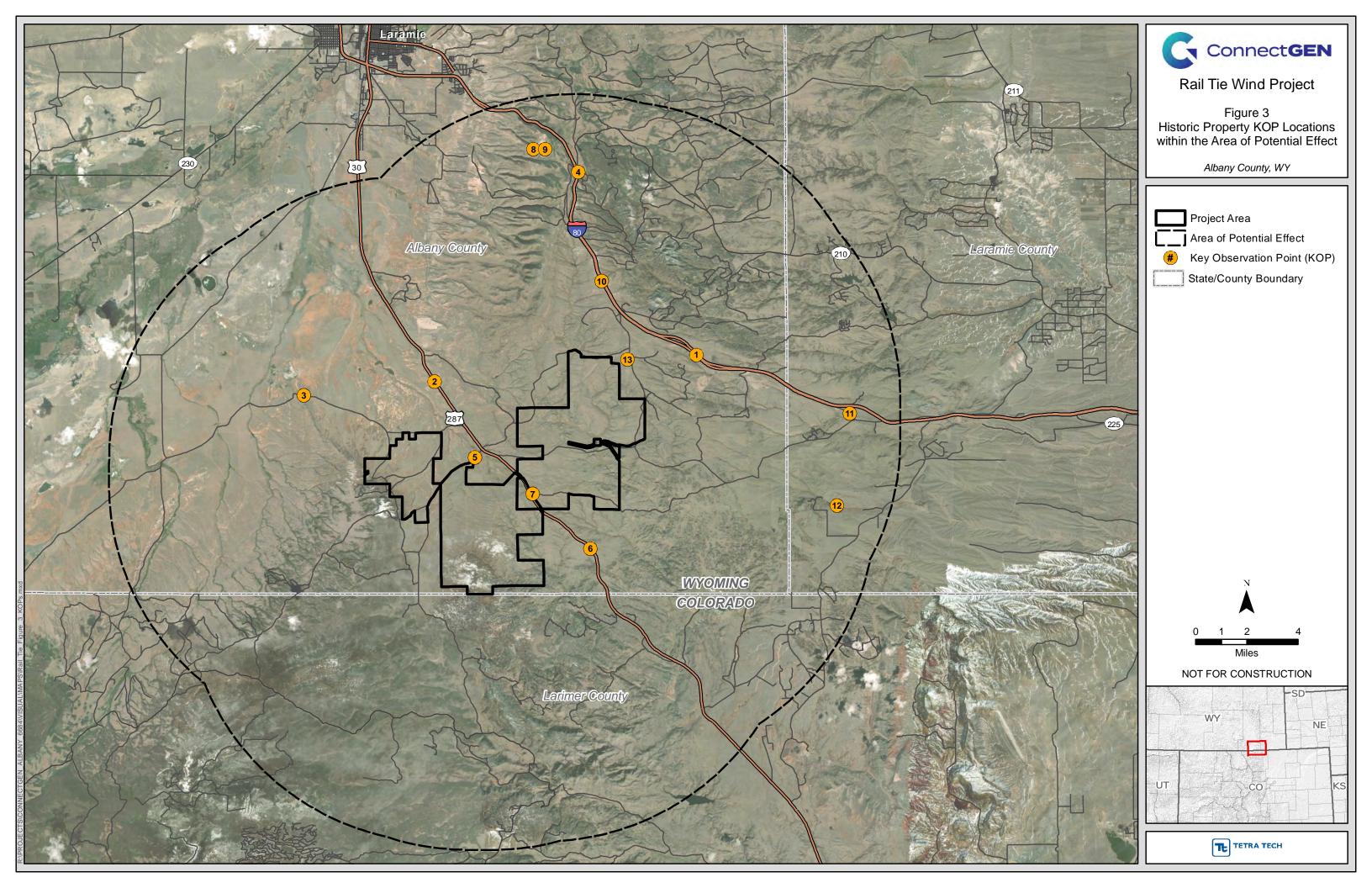
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#### **FIGURES**

- Figure 1: Representative Project Layout (3MW)
- Figure 2: Representative Project Layout (6MW)
- Figure 3: Historic Property KOP Locations within the Area of Potential Effect







**APPENDIX A:** Visual Contrast Rating Forms



Rail Tie Wind Project

**KOP 1: Tree Rock** 

Reviewers Name: S. Brooks   Date: 7/30/2020				PRO	JECT II	NFORMATION									
Latitude: 41.1337° N  Angle of Observation: Level \omega	CR K	OP 1: Tree Rock			Re										
Angle of Observation: Level   S   Inferior   Superior   Visibility: Screened   Operation	Distar	nce to Nearest Turbi	ne (Min/Max): 3.2/3.4	4 miles	Da	te: 7/30/2020									
Type of User: Travelers   Visual Sensitivity:   User Expectation: Low   Duration of View: Low   High   Overall Sensitivity:	Latitu	de: 41.1337° N			Lo	ngitude:105.346	66° W								
Type of User: Travelers    Visual Sensitivity:   User Expectation:   Low   Duration of View:   High   Low   Low   High   Low   Use Volume:   High   Use Volume:   High   Low   Use Volume:   High   Low   Use Volume:   High   Use Volume:   Use Volume:   High   Use Volume:   High   Use Volume:   Use Volume:   High   Use Volume:   Use Vol	Angle	of Observation:													
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Foreground (FG)/Middleground (MG): flat, level to gently rolling   Background (BG): short, linear band   FG/MG: irregular and patchy; pyramidal, rounded   BG: not discernible   FG/MG: short, thin, numerous; tall, simple/geometric, transparent; block; rectangular; long, linear, horizontal, vertical   BG: not discernible   BG: not discernible   FG/MG: strong vertical, horizontal, straight and geometric; angular and rectangular   BG: not discernible   BG: not discernible   BG: not discernible   FG/MG: gently undulating, horizontal   BG: not discernible   FG/MG: strong vertical, horizontal, straight and geometric; angular and rectangular   BG: not discernible   BG: not discernible   FG/MG: light and dark brown, light and dark gray, white, red   BG: not discernible   BG: not discernible   FG/MG: simple uniform even order   FG/MG: simple uniform ev	Has a	Photo Simulation B	een Created for KO	P?	□ Yes	⊠ No	If yes, Figu	re Number:	N/A						
Foreground (FG)/Middleground (MG): flat, level to gently rolling Background (BG): short, linear band  FG/MG: short, linear band  FG/MG: short, linear band  FG/MG: short, linear band  FG/MG: short, irregular and patchy; pyramidal, rounded simple/geometric, transparent; block; rectangular; long, linear, horizontal, vertical BG: not discernible  FG/MG: gently undulating, horizontal BG: irregular, horizontal BG: irregular, horizontal BG: not discernible  FG/MG: short, irregular BG: not discernible  FG/MG: strong vertical, horizontal, straight and geometric; angular and rectangular BG: not discernible  FG/MG: tan, sage green, green BG: not discernible  FG/MG: pale-yellow, sage green, green, dark green BG: not discernible  FG/MG: light and dark brown, light at dark gray, white, red BG: not discernible  FG/MG: simple uniform even order			CHAR	RACTERIS	TIC LAI	NDSCAPE DESC	RIPTION								
level to gently rolling Background (BG): short, linear band  BG: not discernible  FG/MG: gently undulating, horizontal BG: not discernible  FG/MG: short, irregular BG: not discernible  FG/MG: strong vertical, horizontal, straight and geometric; angular and rectangular BG: not discernible  FG/MG: tan, sage green, green BG: not discernible  FG/MG: pale-yellow, sage green, green, dark green BG: not discernible  FG/MG: light and dark brown, light and dark gray, white, red BG: not discernible  FG/MG: granulated coarse  FG/MG: course uniform: clumped scattered  FG/MG: simple uniform even order						Vegetation		9	Structures						
BG: irregular, horizontal  BG: not discernible  FG/MG: tan, sage green, green  BG: not discernible  FG/MG: pale-yellow, sage green, green, dark green  BG: not discernible  FG/MG: light and dark brown, light and dark gray, white, red  BG: not discernible  FG/MG: course uniform: clumped scattered  FG/MG: simple uniform even order	Form	level to gently rolling				d patchy; pyramidal,	rounded	simple/geometr rectangular; lor vertical	ric, transparent; blocky, ng, linear, horizontal,						
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FG: fine, granulated, coarse MG/BG: fine to medium  FG/MG: course, uniform; clumped, scattered BG: not discernible  FG/MG: simple, uniform, even, order medium; complex BG: not discernible	Color		een, green			, sage green, green,	dark gray, white, red								
	Texture					form; clumped, scatte	ered								
REPRESENTATIVE PHOTOGRAPH				REPRES	FNTATI	VE PHOTOGRAI	PH								

Rail Tie Wind Project

KOP 1: Tree Rock

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		.and/Water	1	egetatio					tures				
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Line	N/A	N/A	N/A	N/A			straigh ical, an		BG: stra vertical,	aight, , angular			
Color	N/A	N/A	N/A	N/A		BG:	white,	light gray	BG: white, light gra				
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			CONTRAS	<b>RATIN</b>									
	Minin	num Impact Scenario 1			Max	imum In	npact	Scenari	0 2				
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	_X_ YesNo			_XYes No									
	3. Additional mit	igating measures recomme	ended?	3. Additional mitigating measures recommended?									
	1 &3^_ NO	<b>U</b>		YesX_ No									
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		July 30, 2020); Jennifer Ch les (August 3, 2020)	ester (August 1,	Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020); Julia Mates (August 3, 2020)									

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic
	landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Rail Tie Wind Project

Comments (See Item 2):

**KOP 1 at Tree Rock** 

Tree Rock is a historic property eligible for listing in the NRHP under Criterion A for its association with the Union Pacific Railroad and as an important landmark for travelers along the Lincoln Highway, U.S. Highway 30, and now Interstate 80. Tree Rock is a small, twisted, limber pine tree. growing out of a crack in a pre-Cambrian Era pink Sherman granite boulder. Tree Rock was visible to passers-by since the 1860s when the Union Pacific Railroad was built. In 1901, the railroad line moved south, but a wagon road remained. In 1913, the old Lincoln Highway was built by Tree Rock. Finally, in the 1960s, Interstate 80 was built and Tree Rock was preserved as a pullout in the median of the highway.

KOP 1: Tree Rock

The distance to the nearest turbine would be 3.2 and 3.4 miles, respectively. Although wind turbines would be visible (twenty-five 3.0 MW or thirty 5.6 MW turbines ) from this location, the existing human-made features associated with the interstate will continue to be dominant features on the landscape and diminish the setting and feeling associated with this resource. The Project would be visible but appear as a subordinate feature in the landscape. Foreground elements would draw viewer attention while the visible elements of the Project lack conspicuity. As such, the Project would introduce weak contrast for both turbine height scenarios.

Additional Mitigating Measures (See item 3):

No further work is recommended:

The current review concludes that views of the wind turbines are sufficiently weakened by the human-made features already surrounding the historic property (Interstate 80, electric transmission lines, electric distribution lines, homes, and roads) and will not dominate the existing setting. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014) and III.B.2 and II.C of the Final Draft PA, development of the Project will result in No Adverse Effect on Tree Rock.

#### **References Cited:**

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Rail Tie Wind Project

KOP 2: Cherokee Trail Location 1

			Р	ROJECT INFO	ORMATIO	V							
CR K	(OP 2: Cherokee Trail	Location 1			Reviewers Name: S. Brooks								
Dista	ance to Nearest Turbir	ne (Min/Max): 2.2/2.2	miles		Date: 7-30-2020								
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	e of User:	Visual Sensitivity:				1							
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Visito	ors/Residential	Moderate (travelers)		Low (traveler	•	High (trav	•	Moderate (travelers)					
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Texture	N/A N/A MG: fine								I I					FG/MG: fine, scattered					FG/MG: fine, scattered									
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Does project design meet visual resource management objectives?  Yes X _No								Does project design meet visual resource management objectives? Yes _X _ No																				
3. Additional mitigating measures recommended?XYes No								3. Additional mitigating measures recommended? _ XYesNo																				
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#### **Contrast Rating Criteria:**

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

#### Comments (See Item 2):

#### **KOP 2 at Cherokee Trail Location 1:**

Cherokee Trail (Location 1) could not be relocated during field photography at the originally recorded location provided by SHPO; however, a representative KOP location was chosen approximately 0.2 mile northwest of the feature along U.S. 287 to represent the closest public viewing point. This portion of the Cherokee Trail is a segment of the southern branch of the Cherokee Trail, which has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation because immigrants and settlers used the trail as they traveled to California during the Gold Rush period.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint (2.2 miles) and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the color of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines contrasts with the strong horizontal lines in the existing view. Addition of the wind turbines introduces a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., residences, fences, electric transmission line towers, and communications infrastructure) are visible in the middleground and background in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines than the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbines for both layouts to the viewpoint (2.2 miles), the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

While the southern branch of the Cherokee Trail has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation (immigrants and settlers used the trail as they traveled to California during the Gold Rush period), there is no documentation of the segment associated with KOP 2. The documentation provided in Site Form 48AB1447 is for a segment of the Cherokee Trail (Segment 188) that lies approximately 33 miles southwest of KOP 2. Documentation of Segment 188 of the Cherokee Trail indicates that it lacks integrity and may lie under State Route 230 and Boswell Road (FSR 526).

Observations made during field photography and a desktop evaluation of Cherokee Trail at Location 1 (KOP 2) did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Cherokee Trail segment exhibits integrity prior to a visual impact determination being made.

### Additional Mitigating Measures (See item 3):

Mitigation Measures are undetermined.

### Rail Tie Wind Project

KOP 2: Cherokee Trail Location 1

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into the historic property's existing landscape. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Cherokee Trail (Location 1). However, the location and integrity of this historic property need to be confirmed in the field. If this trail segment is not extant, there would be no effect on a historic property at this location. At present the Project effect is **Undetermined**.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 2009. Wyoming Cultural Properties Form for Cherokee Trail. Smithsonian Number AB1447\_188. June 28, 2009.

Rail Tie Wind Project

**KOP 3: Cherokee Trail Location 2** 

			Pl	ROJECT INFO	ORMATION								
CR I	KOP 3: Cherokee Trail	Location 2			Reviewers Name: S. Brooks								
Dist	ance to Nearest Turbir	ne (Min/Max): 3.9/4.6	miles		Date: 7-30-2020								
Latit	ude: 41.1099° N				Longitude:105.6410° W								
Ang	le of Observation:				Visibility:								
	Level ⊠	Inferior $\square$	Su	perior $\square$	Screen (Partially/C		Backdropped 1	□ Skylined ⊠					
Туре	e of User:	Visual Sensitivity:											
Visit		User Expectation:		Duration of Vie		Use Volur		Overall Sensitivity:					
Resi	dents	High (residents/visite	ors)	Moderate (vis	•	High (res		Moderate (visitors)					
Haa	a Photo Simulation Be	on Created for KOD	2	High (residen			e (visitors)	High (residents) N/A					
паѕ	a Photo Simulation Be			☐ Yes	⊠ No		gure Number:	IV/A					
CHARACTERISTIC LANDSCAPE DESCRIPTION													
	Land/\		LC:		etation			Structures					
E	Foreground (FG): flat, le Middleground (MG): flat,			rregular, patchy large contiguous			FG/MG/BG: not of	uiscemible					
Form	Background (BG): low, g	ently undulating		irregular patches									
	, , ,	, , ,		<b>J</b> 1									
	FG: straight, rounded, he		FG:	straight, horizonta	al, and irregu	lar	FG/MG/BG: not of	discernible					
Line	MG/BG: horizontal, gent	ly undulating		irregular, horizon	ntal, rounded								
=			BG:	horizontal									
	FC/MC: ton		FC.	iahtawaan tan			FG/MG/BG: not discernible						
_	FG/MG: tan BG: not discernible			ight green, tan light green, dark	areen		1 G/MG/DG. HOL GISCETHIDIE						
Color	DO: Hot discernible			dark green	giccii								
				J									
a)	FG: fine, granulated			ine, clumped			FG/MG/BG: not of	discernible					
Texture	MG: fine BG: not discernible		MG/I	3G: fine									
T <sub>e</sub>	DG. Hot discernible												
		R	FPRI	ESENTATIVE	PHOTOGE	RAPH							
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			The same			DESCRIPTION OF THE PARTY OF THE							
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					A 3 5 5 6 7 7 7 8								

PROPOSED ACTIVITY DESCRIPTION													
		d/Water	Veg	etation			Structures						
	Scenario 1	Scenario 2	Scenario 1		Scenario 2	Scena		Scenario 2					
Form	N/A	N/A	MG: removal of grasses for roads and wind turbine pads	gras	removal of ses for roads wind turbine	FG/MG: tall, vertical, unif		FG/MG: tall, thin, vertical, uniform					
Line	N/A	N/A	MG: long, curving, parallel (butt-edge with roads)	para	long, curving, llel (butt-edge roads)	FG/MG: stro straight, ang		FG/MG: strong, straight, angular					
Color	N/A	N/A	MG: removal of green grasses		removal of n grasses	FG/MG: white gray	te, light	FG/MG: white, light gray					
Texture	N/A	N/A	MG: fine	MG:	fine	FG/MG: fine scattered	ı	FG/MG: fine, scattered					
			CONTRAST	T RATII	NG								
	Minim	um Impact Scenario	1		Maxi	imum Impac	t Scena	rio 2					
		Features				Feat	tures						
Elements	Degree of Contrast	NOW X X X X X X X X X X X X X X X X X X X	STRUCTURES  WODERATE  NONE  X  X  X	Elements	Degree of Contrast FORM LINE COLOR	A NONERATE X X X X X X X X X X X X X X X X X X X		ARTION STRUCTURES  WOODERAJE  X  X  X  X  X  X  X					
	Texture	X	X		Texture	X	X	X					
	Overa	all Level of Contrast: St	trong		Ov	erall Level of	Contras	t: Strong					
objec Y	ctives? es X _No	neet visual resource mana		Does project design meet visual resource management objectives? YesX _ No									
	lditional mitigating m Yes No	neasures recommended?			itional mitigating YesNo	g measures re	commen	ded?					
Shau	uators' Name(s): Dat ın Brooks (July 30, 2 Mates (August 3, 20	2020); Jennifer Chester (A	August 1, 2020);	Evaluators' Name(s): Date(s)  Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020); Julia Mates (August 3, 2020)									

#### **Contrast Rating Criteria:**

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic
	landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Comments (See Item 2):

**KOP 3 at Cherokee Trail Location 2** 

Cherokee Trail (Location 2) could not be relocated during field photography at the originally recorded location provided by the SHPO; however, a representative KOP location was chosen along the feature just north of its intersection with Sportsman Lake Road to reflect the closest public viewing point. This portion of the Cherokee Trail is a segment of the southern branch of the Cherokee Trail, which has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation because immigrants and settlers used the trail as they traveled to California during the Gold Rush period. The property is also eligible for listing under Criterion D because the site has proven to contain historic and prehistoric artifacts associated with the Cherokee Nation.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint (3.9 and 4.6 miles, respectively), and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the color of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and proximity of the Project. The vertical line of the wind turbines contrasts with the strong horizontal lines in the existing view. Addition of the wind turbines introduces a new industrial type use to a rural landscape setting. No other structures appear in this area, which would make the turbines more pronounced. The proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbines for each layout to the viewpoint (3.9 and 4.6 miles, respectively), the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

While the southern branch of the Cherokee Trail has been determined eligible for listing in the NRHP under Criterion A for its association under the theme of transportation (immigrants and settlers used the trail as they traveled to California during the Gold Rush period), there is no documentation of the segment associated with KOP 3. The documentation provided in Site Form 48AB1447 is for a segment of the Cherokee Trail (Segment 188) that lies approximately 28 miles southwest of KOP 3. Documentation of Segment 188 of the Cherokee Trail indicates that it lacks integrity and may lie under State Route 230 and Boswell Road (FSR 526).

Observations made during field photography and a desktop evaluation of Cherokee Trail at Location 2 (KOP 3) did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Cherokee Trail segment exhibits integrity prior to a visual impact determination being made.

Additional Mitigating Measures (See item 3)

Mitigation Measures are undetermined.

Rail Tie Wind Project

KOP 3: Cherokee Trail Location 2

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into the historic property's existing landscape. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Cherokee Trail (Location 2). However, the location and integrity of this historic property need to be confirmed in the field. If this trail segment is not extant, there would be no effect on a historic property at this location. At present the Project effect is **Undetermined**.

**References Cited:** 

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 2009. Wyoming Cultural Properties Form for Cherokee Trail. Smithsonian Number AB1447\_188. June 28, 2009.

Rail Tie Wind Project

**KOP 4: Lincoln Monument** 

			P	ROJECT IN	<b>IFORMATION</b>								
CR K	OP 4: Lincoln Monum	ent			Reviewers N	ame: S. Bro	ooks						
Distar	nce to Nearest Turbin	e (Min/Max): 7.2/7.4	miles		Date: 7/30/20	)20							
Latitu	de: 41.2372° N				Longitude: -	·105.4359°	W						
Angle	of Observation:		_		Visibility:								
	Level $\square$	Inferior $\square$	Sup	erior 🗵			Backdropped □	☐ Skylined ☐					
Type	of User:	Visual Sensitivity:			Completely)								
Travel	-	User Expectation:		Duration of	/iew:	Use Volum	e:	Overall Sensitivity:					
Visitor	S	Low (travelers)		Low		High		Low (travelers)					
		Moderate (visitors)				16 5	Moderate (visitors)						
Has a	Photo Simulation Be	en Created for KOP	?	☐ Yes	⊠ No	If yes, Fig	ure Number:	N/A					
		CHAR	ACTE	RISTIC LAI	NDSCAPE DE	SCRIPTIO	N						
	Land/V				egetation			tructures					
_	Foreground (FG)/Middle	eground (MG): flat,		/IG: irregular a not discernible			FG/MG: short, thin						
Form	level to gently rolling Background (BG): short	t. linear band	BG: I	iot discernible			linear, horizontal, v	blocky, rectangular; long, vertical					
ш.		,					BG: not discernible						
	FG/MG: gently undulati			/IG: short, irreg			FG/MG: vertical, horizontal, straight and						
Line	BG: irregular, horizonta	l	BG: ı	not discernible			geometric; angular BG: not discernible						
							BG: Hot discernible	<del>;</del>					
	FG/MG: tan, sage gree	n, green	FG/N	IG: sage gree	n, green, dark gr	ee <b>n</b>	FG/MG: light and o	dark brown, light and dark					
Color	BG: not discernible	, <b>g</b>		not discernible			gray, white, red, bl	ue, tan					
ပိ					BG: not discernible	9							
	CC. fine granulated	norgo	FC/8	IC. source el-	umpod coattons		FC/MC, simple	siform output ordered.					
ıre	FG: fine, granulated, co			ગંહ: course, cil not discernible	ımped, scattered	l	FG/MG: simple, uniform, even, ordered; medium; complex						
Texture		20	410001111010		BG: not discernible								
			REPR	ESENTATI	VE PHOTOGI	RAPH							



Rail Tie Wind Project

**KOP 4: Lincoln Monument** 

10011 1	Land/Water						1	Vegetation Structures								11101					
	Scenario 1			enario 2		Scon	ario 1	regetat	Scenario 2			Scenario 1 Scenario 2									
	N/A		N/A	enano z		N/A	alio i		J/A	RG:	short				BG: short, thin,						
Form	IWA		IN/A			IV/A		'	WA.		angi		, u	ι,		angular					
Line	N/A		N/A			N/A		N	N/A			straig ılar	jht, v	/ertic	al,	BG: straight, vertical, angular					
Color	N/A		N/A			N/A			N/A			white	, ligh	nt gra	ny	BG: white, light gray			t gray		
Texture	N/A	/A N/A					N/A N/A						BG: fine					BG: fine			
	CONT								TING												
	Minimum Impact Scenario 1									axir	num l	mpa	ct S	cer	nario	2					
	Features												atur								
	LAND/WATER VEGETATION ST					STRUCTU	RES			П	AND/WA			<b>V</b> EGE	ΤΔΤΙΩ	N S	STRIIC	CTURE	2		
ts	Degree of Contrast	STRONG MODERATE NONE MEAK MODERATE MODERATE NONE				IG RATE		ts	Degree of Contrast	Strong	ш		<u>5</u>	SATE		None Strong	щ	¥	None		
Elements	Form		X		X	X		Elements	Form			X				<u>τ</u>	Ī	X			
Ele.	Line		<del>    х</del>		X	l x	П		Line			X						X			
_	Color	$\vdash$	+		X	l x	H	-	Color			X				d	H	X	_		
	TEXTURE	$\vdash$	<del>                                     </del>		X	X	H		TEXTURE		$\vdash$	X		$\dashv$			$\perp$	X	-		
							!			<u> </u>						_	!	<u>^</u> _			
	0	verall	Level o	f Contras	st: We	eak				Ove	erall Le	evelo	of C	ontr	ast:	Wea	k				
2. Does project design meet visual resource management objectives?							2. Does project design meet visual resource management objectives?														
_X_ Y	_X_ YesNo							_XYes No													
3. Additional mitigating measures recommended?YesX_ No							3. Additional mitigating measures recommended?YesX_ No														
Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020); Julia Mates (August 3, 2020)					Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020); Julia Mates (August 3, 2020)																

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.

Rail Tie Wind Project

KOP 4: Lincoln Monument

None The element contrast is not visible or perceived.

#### **Comments (See Item 2):**

#### **KOP 4 at Lincoln Monument**

The Lincoln Monument was created by the renowned Wyoming sculptor and artist, Robert Russin, in 1959 to commemorate the highest point on the Lincoln Highway (U.S. Highway 30). It was moved to its current location at the Summit Rest Area along Interstate 80 in 1968. The monument is eligible for listing in the NRHP under Criterion A for its association with the national highway system and under Criterion C for its association with Robert Russin.

The distance to the nearest turbine would be 7.2 and 7.4 miles, respectively. Given the number of wind turbines potentially visible (sixty-seven 3.0 MW or forty-six 5.7 MW ), existing human-made features (described below) would continue to be dominant features on the landscape. The Project elements may be noticeable in the far view but would appear as a subordinate feature in the landscape. Views likely would be blocked by structures associated with the existing Summit Rest Area and, if turbines are visible, they would be seen in context with security lighting, paved parking areas, flagpoles, and other modern structures . As such, the Project would create weak visual contrast for both turbine height scenarios.

#### **Additional Mitigating Measures (See item 3):**

No further mitigation measures are recommended:

The current review concludes that views of the turbines are sufficiently weakened by the distance from the Project and the existing modern features already present surrounding the historic property. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in **No Adverse Effect** on the Lincoln Monument.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: <a href="https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014">https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014</a>. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 2013. Wyoming Cultural Properties Form for Lincoln Monument. Smithsonian Number 48AB153. September 2013.

Land/Water

Rail Tie Wind Project

**KOP 5: Overland Trail Segment 1** 

Structures

			PF	ROJECT INFO	RMATION							
CR K	OP 6: Overland Trail S	Segment 1			Reviewers	Name: S.	Brooks					
Dista	nce to Nearest Turbin	e (Min/Max): 0.9/0.7	mile		Date: 7-30	-2020						
Latitu	ıde: 41.0752° N				Longitude	:105.512	24° W					
Angle	e of Observation:		_		Visibility:							
	Level ⊠	Inferior $\square$	Sup	perior $\square$	Screen		Backdropped [	□ Skylined ⊠				
Type	of User:	Visual Sensitivity:			(Partially/Co	ompietely)						
Trave		User Expectation:		Duration of Vie	w:	Use Volun	ne:	Overall Sensitivity:				
Resid		Moderate (travelers)		Low (travelers	3)	High (trav	relers)	Moderate (travelers)				
		High (residents)		High (resident	s)	Low (resid		High (residents)				
Has a	Photo Simulation Be	en Created for KOP?	?	$\square$ Yes	extstyle  ext	If yes, Fig	gure Number:	N/A				
		CHARA	CTER	RISTIC LANDS	CAPE DE	SCRIPTIC	N					
	Land/V				tation			Structures				
	Foreground (FG): flat, lev			rregular				rizontal; geometric; tall				
	Middleground (MG): flat, undulating	ievei to gentiy		pyramidal, large o rregular patches	contiguous		vertical, thin; bloc MG: short, thin, c					
ъ.	Background (BG): low, bl	locky, undulating	DO. 1	regular pateries			BG: short	omplex				
	FG: straight, horizontal		FG: s	traight, horizonta	I (butt-edge v	with road),	FG: short, thin, so	quare/rectangular; tall, thin				
	MG: horizontal, gently un			ontal and irregula		-	simple; angular					
: <u>-</u>	BG: horizontal, gently to	moderately undulating	l	thin, irregular, ho norizontal	rizontal		MG: thin, parallel BG: short, thin					
	FG/MG: reddish-brown, t	on		ight and dark gre	on roddich h	rown	-	hroun				
	BG: not discernible	dII		igni and dark gre green	en, reaaisn-b	IOWII	FG: gray, green, brown MG: brown, white					
Color	2011101 410001111101			lark green			BG: light gray					
ىو	FG: fine, granulated			ine, clumped, cou	ırse		FG: fine, medium					
	MG: fine BG: medium		MG/E	BG: fine			BG: even, ordere	ed, fine to medium				
<u>a</u>	DO. IIICuluiii						BG. even, ordere	u, illic				
		R	EPRE	SENTATIVE	PHOTOGR	RAPH						
			-200	S-2								
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720	MILE TO THE											
No.			A PROPERTY OF		The state of the state of							

PROPOSED ACTIVITY DESCRIPTION

Vegetation

N/A

Scenario 2

Scenario 1

MG: removal of

Rail Tie Wind Project

N/A

Scenario 1

KOP 5: Overland Trail Segment 1
Scenario 1 Scenario 2

FG/MG: tall, thin,

FG/MG: tall, thin,

Form	pads						r roa	ads	gras	sses	s for roads nd turbine				l, ur								ii, ui niforr								
Line	N/A			N/A	1					pa	ralle		curv utt-e )			allel	ng, curving (butt-edge ads)				3: st ıt, aı								rong		
Color	N/A			N/A	1								val o				moval of grasses		FG gra		3: W	hite	e, liç	jht		FG. gra		: wl	hite,	ligh	nt
Texture	N/A			N/A	1					MC	G: fii	ne			MG:	: fin	e			/MC	ed	ne,					/MG atter		ie,		
												CO	NT	RAS	ST RATING																
Minimum Impact Scenario 1						Maximum Impact Scenario 2																									
Features						_	Features																								
Land/Water Vegetation Structures										LAND	/W	ATER	2	١	<b>/</b> EG	ETA	TION	Ľ	STRI	UCTU	RES	5									
ıts	STRONG WEAK WEAK NONE STRONG MODERATE WEAK NONE STRONG MODERATE WEAK NONE MODERATE WEAK NONE						ts		Degree of Contrast		O TRONG	MODERAIE	WEAK	None	STRONG	Moderate	WFAK	None	STRONG	MODERATE	WEAK	V EAR	None								
Elements	Form			X			X			Х					Elements		For			X		Ī		Х			Х		T		1
Ele	Line		Х			Х				Х					E		Lin	E	X				Х				Х				
	Color			Х			X			Х							Сого	R		X				Х			Х				
	Texture			Х			Х			Х						TEXTURE		Ξ		Х				Х			Х				
	(	Ove	rall	Le۱	el c	of C	ont	rast	t: St	ron	g							Ove	rall	Lev	/el (	of	Coı	ntra	ast:	Str	onç	j			
Overall Level of Contrast: Strong  2. Does project design meet visual resource management objectives?						2. Doe object		project de s?	sign	mee	et vi	sua	l re	eso	urc	e m	iana	ıger	ner	nt											
Yes X _No							Yes	s _	_X _ No																						
3. Additional mitigating measures recommended?XYes No								onal mitiga esNo	ting	mea	isui	res	rec	om	me	ende	∍d?														
Shau	ıators' Name(s) n Brooks (July Mates (August	30,	202	(0);	Jen	nifeı	r Ch	este	er (A	lugi	ust	1, 2	:020	<b>)</b> ;	Shaun	n B	rs' Name( rooks (Jul tes (Augus	, 30,	202	20);	Jer	nni	fer	Ch∈	este	er (Æ	∖ugı	ıst	1, 2	:02(	0 <b>)</b> ;

Scenario 2

MG: removal of

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic
	landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Rail Tie Wind Project

**Comment (See Item 2):** 

#### **KOP 5 at Overland Trail Segment 1**

Overland Trail Segment 1 is identified as a contributing segment of the overall linear resource, which was previously recommended as eligible for listing in the NRHP as a nationally significant stage and freight road. The original evaluation forms do not indicate under which NRHP criteria the trail is eligible, but it is assumed to be under Criterion A.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint (0.9 and 0.7 mile, respectively), and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the color of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines contrasts with the strong horizontal lines in the existing view. Addition of the wind turbines would introduce a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., residences, fences, electric transmission line towers, electric distribution lines, and communications infrastructure) are visible in the middleground and background in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbine scenarios to the viewpoint (0.9 and 0.7 mile, respectively), the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios. Observations made during field photography and a desktop evaluation of this trail segment did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Overland Trail segment exhibits integrity prior to a visual impact determination being made..

Additional Mitigating Measures (See item 3):

#### Mitigation Measures are undetermined.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into both of the historic properties' existing landscapes. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Overland Trail Segment 1. However, the location and integrity of this historic property need to be confirmed in the field. If this trail segment is not extant, there would be no effect on a historic property at this location. At present the Project effect is **Undetermined**.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 2005. Wyoming Cultural Properties Form for Overland Trail-Segment 1. Smithsonian Number 48AB157. July 2, 2005.

Wyoming SHPO (Wyoming State Historic Preservation Office). 1986. Wyoming Cultural Properties Form for Willow Springs Station. Smithsonian Number 48AB359. June 6, 1986.

**KOP 5: Overland Trail Segment 1** 

Rail Tie Wind Project

KOP 5: Overland Trail Segment 1

Rail Tie Wind Project Railroad) KOP 6: Overland Trail Segment 14/CMM-JF-08 Extension (Union Pacific

(Union Distar Latitue Angle Type o Visitor Travel				Reviewer  Date: 7-3	s Name: S 0-2020	. Brooks							
Distar Latitu Angle Type ( Visitor Travel	nce to Nearest Turbin de: 41.0238° N e of Observation: Level  of User:	Inferior		Longitud									
Angle Type of Visitor Travel	de: 41.0238° N of Observation: Level  of User:	Inferior		Longitud									
Type of Visitor Travel	Level ⊠  of User:		Superior □	Visibility:	Longitude: -105.4259° W								
Visitor Travel	of User:		Superior $\square$										
Visitor Travel	s	Visual Sensitivity:			ned □ Completely)	Backdropped	□ Skylined ⊠						
Travel		Hoor Funcatation	Duration of	l/iau.	Use Volur		Overall Consideration						
Has a		User Expectation: High (visitors) Moderate (travelers)	Moderate	visitors)		(visitors)	Overall Sensitivity: Moderate (visitors) Moderate (travelers)						
	Photo Simulation Be	en Created for KOP?	Yes □ Yes	⊠ No	If yes, Fi	es, Figure Number: N/A							
		CHARA	CTERISTIC LAN		SCRIPTIO	ON							
	Land/W			egetation			Structures						
ا ع	Foreground (FG):flat to ro Middleground (MG):gentl Background (BG): low, ui	y undulating	FG: rounded, irreg MG: patchy, pyran BG: irregular patcl	idal	ramidal	FG: horizontal, v MG: tall, thin, ve BG: not discernil							
الوه	FG: horizontal, gently und MG: horizontal, undulatin BG: horizontal, gently to	ig -	FG: horizontal and MG: irregular, hori BG: horizontal			FG: short, thin, simple MG: thin, tall, simple BG: not discernible							
<b>I</b>	FG/MG: reddish-brown, t BG: not discernible	an	FG: sage green, li MG: sage green, li BG: dark green		green	FG: gray, brown, MG: brown, gray BG: not discernil	1						
	FG: fine, granulated MG/BG: fine		FG: fine, clumped MG/BG: fine			FG: fine, mediun MG: even, order BG: not discernil	ed, fine to medium						
		R	EPRESENTATI	E PHOTOG	RAPH								

Rail Tie Wind Project Railroad)

KOP 6: Overland Trail Segment 14/CMM-JF-08 Extension (Union Pacific

										SCRIPTION												
		Land/Wa							getation								uctı					
	Scenario 1			enario 2			cenar			Scenario 2					io 1					enari		
Form	N/A	N	I/A			MG: re grasse and wi pads	s for r	oads	gras	removal of ses for roads wind turbine s		G/N vertic				,				tall, t unifo		
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Color	N/A	N	I/A			MG: regreen			1	removal of en grasses		G/N Jray	IG:	whit	e, liç	ght	- 1	FG/N gray		white	, lig	nt
Texture	N/A N/A MG				MG: fir	ne		MG:	fine		G/N catt			•				MG: terec	fine, d			
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			Fea	atures									F	eat	ure	S						
		Land/W	ATER	<b>V</b> EGE1	ATION	Stru	CTURE	S			La	ND/V	Vate	ER	1	<b>/</b> EGI	ETATI	ON	St	TRUCT	URE	s
ıts	Degree of Contrast	Strong Moderate	Weak None	Strong Moderate	Weak None	Strong	Weak	None	ıts	Degree of Contrast	Strong	Морекате	WEAK	None	Strong	Морекате	Weak	None	Strong	Морекате	WEAK	None
Elements	Form	)	K	X		Х			Elements	Form			X			X	П		X			1
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•																						
Y	_ Yes X _No							YesX _ No														

# Evaluators' Name(s): Date(s)

\_\_X \_\_Yes \_\_\_ No

Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020);

3. Additional mitigating measures recommended?

Julia Mates (August 3, 2020)

3. Additional mitigating measures recommended?

\_ X \_\_Yes \_\_No

Evaluators' Name(s): Date(s)

Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020);

Julia Mates (August 3, 2020)

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.

Rail Tie Wind Project

KOP 6: Overland Trail Segment 14/CMM-JF-08 Extension (Union Pacific

Railroad)

None The element contrast is not visible or perceived.

#### Comment (See Item 2):

KOP 6 at Overland Trail Segment 14/ CMM-JF-08 Extension (Union Pacific Railroad)

Overland Trail Segment 14 is identified as a contributing segment of the overall linear resource, which was previously recommended as eligible for listing in the NRHP as a nationally significant stage and freight road. The original evaluation forms do not indicate under which NRHP criteria the trail is eligible, but it is assumed to be under Criterion A.

This KOP location also contains a non-contributing segment of the historic Union Pacific Railroad (CMM-JF-08 Extension) that is eligible in its entirety for the NRHP under Criterion A for its association with the westward expansion of commerce. A gravel road was found to exist on the old railroad grade and it was identified that the physical integrity of this portion of the railroad grade has been impacted by the intrusion of major pipelines, It has also been bladed, graded, and gravel covered, as part of the road construction. The site has suffered a significant loss of physical and environmental integrity due to previous construction activities. It was recommended that this segment of the railroad be considered a non-contributing element and SHPO concurred in 1999.

The Project would introduce tall vertical elements into the landscape setting (sixty-five 3.0 MW turbines or forty-seven 5.6 MW turbines). However, it is anticipated that terrain in the foreground/middleground would screen lower portions of the wind turbines. Given their close proximity to the viewpoint and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky and dark green vegetation. Although the appearance of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines would contrast with the strong horizontal lines in the existing view. Addition of the wind turbines would introduce a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., power lines, fences, electric transmission lines, and communications infrastructure) are visible in the foreground and middleground in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbine scenarios to the viewpoint (1.7 and 1.8 miles, respectively), the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios. Observations made during field photography and a desktop evaluation of this trail segment did not definitively identify the segment extant on the landscape. A follow up field visit would need to be conducted to demonstrate this Overland Trail segment exhibits integrity prior to a visual impact determination being made.

#### Additional Mitigating Measures (See item 3):

Mitigation Measures are undetermined.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast into both of the historic properties' existing landscapes. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2

Rail Tie Wind Project KOP 6: Overland Trail Segment 14/CMM-JF-08 Extension (Union Pacific Railroad)

and ILC of the Final Draft PA, development of the Project may result in an Adverse Effect on Overland Trail Segment 14 and the historic Union Pacific Railroad (CMM-JF-08 Extension). However, the location and integrity of these historic properties need to be confirmed in the field. If this trail segment is not extant or UPRR location is determined as non-contributing, there would be no effect on the historic properties at this location. At present the Project effect is **Undetermined for both**.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 1993. Wyoming Cultural Properties Form for Overland Trail Segment 14. Smithsonian Number 48AB157\_14. April 22, 1993.

Wyoming SHPO (Wyoming State Historic Preservation Office). 1999. Wyoming Cultural Properties Form for UPRR Grade. Smithsonian Number 48AB357. July 13, 1999.

Rail Tie Wind Project

## KOP 7: 225/226 Overland Trail Segments

			PF	ROJECT INFO	RMATION						
CR I	<b>COP 7: 225/226 Overla</b>	nd Trail Segments			Reviewers	Name: S.	Brooks				
Dist	ance to Nearest Turbin	ne (Min/Max): 0.3/0.3	mile		Date: 7-30	-2020					
Latit	ude: 41.0547 ° N				Longitude	:105.46	90 ° W				
Ang	le of Observation:				Visibility:						
	Level ⊠	Inferior 🗆	Sup	perior $\square$	Screen (Partially/Co		Backdropped [	□ Skylined ⊠			
	e of User:	Visual Sensitivity:									
Visit		User Expectation:		Duration of Vie		Use Volum		Overall Sensitivity:			
Trav	elers	High (visitors)		Moderate (vis	-	Moderate		Moderate (visitors)			
11	- Dhata Ciasalatian Da	Moderate (travelers)		Low (travelers	•	High (trav		Moderate (travelers) N/A			
Has	a Photo Simulation Be			☐ Yes	⊠ No	,	gure Number:	N/A			
			CTER	ISTIC LANDS		SCRIPTIC					
	Land/V	Vater			etation			Structures			
	Foreground (FG):rolling	ha ana dada Para		ounded, irregular	, patchy			ertical, tall, rectangular, thin,			
Form	Middleground (MG):gent Background (BG): low, u			oatchy rregular patches			short MG: short, thin, c	omnlov			
ŭ.	Background (BG). low, u	ilidulatilig	DG. II	regular pateries			BG: not discernib				
	FG: horizontal, gently un	dulating	FG: h	orizontal and irre	egular		FG: short, thin, ta	ıll. simple			
Ð	MG: horizontal, undulatir			rregular, horizon			MG: thin	,			
Line	BG: horizontal, gently to	moderately undulating	BG: h	orizontal			BG: not discernib	le			
	FG/MG: reddish-brown,	tan		age green, light			FG: gray, brown,	tan			
Color	BG: not discernible			sage green, light	green, dark g	green .	MG: brown, gray BG: not discernible				
ၓ			BG: 0	lark green			BG: not discernib	ne			
	FG: fine, granulated		EC: fi	ne, clumped			FG: fine, medium	1			
<u>re</u>	MG/BG: fine			BG: fine				ed, fine to medium			
Texture							BG: not discernib	le			
		R	EPRE	SENTATIVE	PHOTOGR	RAPH					
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	and the second				I						
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						-					

Rail Tie Wind Project

KOP 7: 225/226 Overland Trail Segments

	,	Pl	ROPOSED ACTIVI	TY DE	SCRIPTION							
		/Water		etation					Struc	tures		
	Scenario 1	Scenario 2	Scenario 1	110	Scenario 2	F0#	Scena			Scenario 2		
Form	N/A	N/A	MG: removal of grasses for roads and wind turbine pads	gras	removal of ses for roads wind turbine		MG: tall, ical, unif			FG/MG: tall, thin, vertical, uniform		
Line	N/A	N/A	MG: long, curving, parallel	para	long, curving, llel (butt-edge roads)		MG: stro ight, and			FG/MG: strong, straight, angular		
Color	N/A	N/A	MG: removal of green grasses		removal of n grasses	FG/l gray	MG: whi	te, ligi	nt	FG/MG: white, light gray		
Texture	N/A	N/A	MG: fine	MG:	fine		MG: fine ttered	),		FG/MG: fine, scattered		
			CONTRAS	<b>RATI</b>	NG							
	Minimu	m Impact Scenario	1		Max	imum	Impac	t Sc	enar	io 2		
		Features		Features								
	Land	Water Vegetation	STRUCTURES			Land/	Water	V	EGETA	ATION STRUCTURES		
Elements		Weak None Strong Weak Weak None		Elements	Degree of Contrast	STRONG			Moderate			
- Bue	FORM	X X	X	eme	Form		Х		X L	X		
Ē	Line X		X	Ξ	Line	X		Х	$\perp$	X		
	Color	X	X		Color		Х		X	X		
	Texture	X     X	X		Texture		Х		X	X		
	Overal	I Level of Contrast: S	trong		Ov	erall L	evel of	Con	trast	: Strong		
	oes project design med	et visual resource man	agement	2. Doe	es project designives?	n meet	visual	resou	rce r	nanagement		
Y	'es X _No			Yes	sX _ No							
	dditional mitigating me Yes No	asures recommended?	?	3. Additional mitigating measures recommended? _ XYesNo						led?		
Shau	uators' Name(s): Date un Brooks (July 30, 20 n Mates (August 3, 202	20); Jennifer Chester (	August 1, 2020);	Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 20 Julia Mates (August 3, 2020)					er (August 1, 2020);			

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic
	landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Rail Tie Wind Project

KOP 7: 225/226 Overland Trail Segments

#### **Comments (See Item 2):**

#### **KOP 7 at 225/226 Overland Trail Segments**

Overland Trail Segments 225 and 226 are identified as contributing segments of the overall linear resource, which was previously recommended as eligible for listing in the NRHP as a nationally significant stage and freight road under Criterion A.

The Project would introduce tall vertical elements into the landscape setting. The wind turbines would be visible extending above the horizon line. The wind turbines would appear as thin white vertical lines. The bottom portions of the towers would most likely be screened by intervening topography. Given their close proximity to the viewpoint and their height above the horizon, the turbines would appear out of scale with the overall horizontal form of the existing landscape. Their white color would also contrast with the light blue color of the sky. Although the appearance of the wind turbines would change as lighting conditions change over the course of the day and year and the contrast of the wind turbines against the sky may be more muted at times, they would still attract attention given the scale and close proximity of the Project. The vertical line of the wind turbines would contrast with the strong horizontal lines in the existing view. Addition of the wind turbines would introduce a new industrial type use to a rural landscape setting. Although other vertical human-made features (i.e., cell towers, fences) are visible in the foreground and middleground in the existing view, the proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to become a focal point within the view. As such, the Project would introduce strong visual contrast.

Although the maximum turbine height scenario would introduce fewer wind turbines as the minimum turbine height scenario, the wind turbines associated with the maximum turbine height scenario would introduce the same level of visual contrast to the existing landscape setting. Given the close proximity of the wind turbine scenarios to the viewpoint (0.3 mile), the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting, the Project would attract attention and become a focal point within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

#### Additional Mitigating Measures (See Item 3):

Mitigation Measures are recommended.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic properties and would result in a strong visual contrast to the existing landscape of Overland Trail Segments 225 and 226. There is also the potential for the historic setting and feeling to be affected by the Project. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in an **Adverse Effect** on Overland Trail Segments 225 and 226.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: <a href="https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014">https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014</a>. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 2009. Wyoming Cultural Properties Form for Segment VZW-A. Smithsonian Number 48AB157\_225. August 27, 2009.

Wyoming SHPO (Wyoming State Historic Preservation Office). 2009. Wyoming Cultural Properties Form for Segment VZW-B. Smithsonian Number 48AB157\_226. August 27, 2009.

Rail Tie Wind Project

KOP 8/9: Lodgepole Creek Trail 1/12

			F	PROJECT IN	IFORMATION	Į		
CR K	OP 8/9: Lodgepole Cr	eek Trail 1/12			Reviewers N	ame: S. Bro	ooks	
Distar	nce to Nearest Turbin	e (Min/Max): 8.2/8.4	miles		Date: 7/30/20	)20		
Latitu	de: 41.2500 ° N (KOP	11)			Longitude: -	-105.4607 °	W (KOP 11)	
Angle	of Observation:		,		Visibility:			
	Level $\square$	Inferior $\square$	Sup	erior 🗵	Screened		Backdropped $\Box$	☐ Skylined ☐
Tuno	of Hoor.	Viewal Compitivity			Completely)			
	of User:	Visual Sensitivity: User Expectation:		Duration of \	liour	Use Volume		Overall Sensitivity:
Visitor	S	High		Moderate	new.	Moderate	<del>5.</del>	Moderate (Visitors)
		ı liği		Moderate		Woderate		Woderate (Visitors)
Has a	Photo Simulation Be	en Created for KOP	?	☐ Yes	⊠ No	If yes, Fig	ure Number:	N/A
		CHARA	ACTE	RISTIC LAN	IDSCAPE DE	SCRIPTIO	N	
	Land/\			V	egetation		S	tructures
	Foreground (FG)/Middl	eground (MG):flat to		1G: irregular ar	nd patchy			, numerous, linear, vertical
Form	gently rolling Background (BG): shor	t linear hand	BG: I	not discernible			BG: not discernible	9
Ľ.	Dackground (DO). Shor	t, iiicai bailu						
	FG/MG: gently undulat	ing, horizontal	FG/N	IG: short, irreg	ular		FG/MG: vertical, s	traight
ō	BG: irregular, horizonta			not discernible	,		BG: not discernible	
Line	-							
_	FG/MG: tan, sage gree	n, green		1G: sage greer not discernible	n, green, dark gr	een	FG/MG: brown	
Color	BG: not discernible		BG: I	not discernible			BG: not discernible	3
ပ								
4	FG: fine, granulated				iform; clumped,	scattered		niform, even, ordered
Texture	MG/BG: fine to medium	1	BG: ı	not discernible			BG: not discernible	9
<u>e</u>								
			DEDD	ECENITATI	/E PHOTOGE	DADU —		
			KEPK	ESENIAII	VE PHOTOGI	КАРП		



Rail Tie Wind Project

KOP 8/9: Lodgepole Creek Trail 1/12

		yeer			PROPOSED ACT	IVITY		81	o, o. hougepoie ereek man 171						
		Land/Wa				Vegeta			Structures						
	Scenario 1			enario 2	Scenario 1		Scenario 2	Scenario 1	Scenario 2						
Form	N/A	N.	/A		N/A		N/A	Not visible	BG: short, thin, angular						
Line	N/A	N	/A		N/A		N/A	Not visible	BG: straight, vertical, angular						
Color	N/A	N	/A		N/A		N/A	Not visible	BG: white, light gray						
Texture	N/A	N	/A		N/A		N/A	Not visible	BG: fine						
					CONTRA	AST R									
	Mini	mum Im	pact !	Scenario	01		Maxii	mum Impact Sce	enario 2						
			Featu	ıres				Features							
		Land/W	ATER	<b>V</b> EGETA	TION STRUCTURES		L	and/Water Veg	STRUCTURES						
Elements	Degree of Contrast	Strong Moderate		Strong Moderate		Elements	Degree of Contrast								
em	Form	-	X	-		eme	Form	X	XXX						
ѿ	Line		X	-	X		Line	X	X X						
	Color		X		X		Color	X	X X						
	Texture		X		X		Texture		X						
	0	verall Le	vel of	Contrast	: None		Ov	erall Level of Con	trast: Weak						
2 Doe	s nroiect design	Overall Level of Contrast: None project design meet visual resource management					oes project design i	meet visual resourc	re management						
objecti		i ilicci vis	uui ios	ource me	magement		ctives?	meet visuul resoure	o munugement						
•	esNo					1 -	_ Yes No								
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	itional mitigating sX_ No	j measure	es reco	ommende	d?	3. Additional mitigating measures recommended?YesX_ No									
Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020); Julia Mates (August 3, 2020)					(August 1, 2020);	Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 202 Julia Mates (August 3, 2020)									

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic
	landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Rail Tie Wind Project

KOP 8/9: Lodgepole Creek Trail 1/12

Comments (See Item 2):

KOP 8/9 at Lodgepole Creek Trail Segments 1 and 12

During the field effort, it was noted that KOP 8 for Lodgepole Creek Trail Segments 1 and 12 was located along a private road and was not publicly accessible. Therefore, given its location approximately 0.45 mile east of KOP 8, visual impacts for both Lodgepole Creek Trail segments 1 and 12 were assessed from KOP 9. Thus, these locations have ultimately been combined into one assessment.

The Lodgepole Creek Trail is eligible for listing in the NRHP under Criterion A for its association with transportation and settlement of the west. The route played a significant role as a transportation route from prehistoric to historic times, particularly during the mid-to late 1880s, when it served as a well-traveled wagon trail for settlers coming to the Wyoming frontier, connecting as it did with the Cherokee and Overland Trails. The site form documentation states that the Lodgepole Creek Trail Segment 1 no longer exhibits integrity and is currently used as a 2-track ranch road. Despite modern use as a modern ranch road, SHPO determined it to be a contributing segment of the trail despite regular use. Lodgepole Creek Segment 12 exhibits swale and rut features and has been determined a contributing segment to the overall eligibility of the Lodgepole Creek Trail.

There would be a very limited number of wind turbines potentially visible at this location (0 3.0 MW or 1 5.6 MW). No turbines would be visible under the minimum scenario. Under the maximum scenario, the existing topography and vegetation would continue to be dominant features on the landscape. Turbine visibility would occur for a short duration, if at all, as the viewer traveled along the trail. The Project would likely not attract attention but appear as a subordinate feature in the landscape. As such, the Project would introduce no visual contrast under the minimum turbine height scenario and weak contrast under the maximum turbine height scenario.

Additional Mitigating Measures (See item 3):

Mitigation Measures are not recommended.

The current review concludes that only one turbine under one turbine height scenario (maximum) would be visible. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in recommended determination of No Adverse Effect for Lodgepole Creek Trail Segments 1 and 12, under the Project's minimum or maximum turbine height scenarios.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). Wyoming Cultural Properties Form for Lodgepole Creek Trail Segment A. Smithsonian Number 48AB354\_1. June 6, 2006.

Wyoming SHPO (Wyoming State Historic Preservation Office). Wyoming Cultural Properties Form for Lodgepole Creek Trail Segment B. Smithsonian Number 48AB354\_12. July 15, 2008.

Rail Tie Wind Project

KOP 10: Cheyenne Pass Road

			ŀ	'KOJECT II	NFORMATION	<u>l</u>					
CR K	OP 10: Cheyenne Pas	ss Road			Reviewers Name: S. Brooks						
Distar	nce to Nearest Turbin	ne (Min/Max): 3.1/3.2	miles		Date: 7/30/2020						
Latitu	<b>d</b> e: 41.1753 ° N				Longitude:105.4180 ° W						
Angle	of Observation:				Visibility:						
	Level ⊠	Inferior $\square$	Sup	erior $\square$	Screened Completely)	(Partially/	Backdropped □	□ Skylined ⊠			
Type	of User:	Visual Sensitivity:									
Travel	ers	User Expectation:		Duration of \	/iew:	Use Volum	e:	Overall Sensitivity:			
		Low		Low		High		Low (travelers)			
	DI 1 0' 11' D	0 1 16 160				16 F		N1/A			
Has a	Photo Simulation Be	een Created for KOP	"?	☐ Yes	⊠ No	If yes, Fig	jure Number:	N/A			
		CHAR	ACTE	RISTIC LAN	NDSCAPE DE	SCRIPTIO	N				
	Land/\			V	egetation		S	tructures			
	Foreground (FG)/Middl	eground (MG): flat,		/IG: irregular a				n, numerous; tall, simple/			
Form	level to gently rolling		BG:	not discernible				arent; blocky, rectangular;			
윤	Background (BG):patcl	ny, dark linear band					discernible	orizontal, vertical BG: not			
	FG/MG: gently undulat	ing, horizontal	FG/N	/IG: short, irreg	jular		FG/MG: strong vertical, horizontal, straight				
Line	BG: irregular, horizonta	al	BG:	not discernible			and geometric; angular and rectangular				
5							BG: not discernible	e			
	FO/840 1		F0."	10 1 "			F0/840				
_	FG/MG: tan, sage gree BG: green, white	en, green	FG/N		v, sage green, gi	een, dark	FG/MG: light and of gray, white, red, ta	dark brown, light and dark			
Color	bo. green, write			not discernible			BG: not discernible				
O								-			
0	FG: fine, granulated, co				iform; clumped,	scattered		niform, even, ordered;			
Texture	MG/BG: fine to mediun	n	BG:	not discernible			medium; complex				
<u>f</u>							BG: not discernible	<del>U</del>			
			DEDE	CCENITATI	VE DUOTOCI	DADH —					
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PROPOSED ACTIVITY DESCRIPTION									
	Land/Water	Vegetation	Structures						

Rail Tie Wind Project

KOP 10: Cheyenne Pass Road

	Scenario 1			enario	2		Scenario 1			Scenario 2			S	cena	rio	1			Sce	nari	0 2	
Form	N/A	1	N/A			N/A			N/	'A		B	G: tal	l, thir	ı, ar	ngula	ır	BG:	tall, t	hin,	angı	ular
Line	N/A N/A					N/A			N/	'A			G: str ngula	-	, ve	ertica		BG: angı	straig ılar	ght, v	verti	cal,
Color	N/A N/A					N/A			N/A			В	BG: white, light gray				,	BG:	white	, ligl	nt gr	ray
Texture	N/A	I	N/A			N/A			N/	'A		В	G: fin	e				BG:	fine			
							CONTRA	AST R	RAT													
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				ures										Featu								
		Land/V	Vater	VEG	ETATION	1	RUCTURES				L/		NATE	₹ _	Vı	EGET/	ATION	<u>                                     </u>	TRU	CTUR	ES	
ıts	Degree of Contrast	Strong Moderate	Weak None	Strong	Weak	STRONG	Moderate Weak None	ıts		Degree of Contrast	STRONG	Морекате	Weak	None	OTRONG	Морекате	WEAK	STRONG	Моревате	WEAK	None	
Elements	Form		X		X		X	Elements		Form				x			X		Х			
Ele	Line		X		X		X	쁩		Line				x [			X		Х			
	Color		X		X		X			Color			7	X			X		Х			
	TEXTURE		Х		X		X			Texture				x			X	Γ	Х	П		
	Overall Level of Contrast: Moderate									Oı	vera	all L	evel	of C	ont	rast	: Mc	oder	ate			
2. Does project design meet visual resource management objectives?								2. Does project design meet visual resource management objectives?					t									

\_\_\_ Yes \_\_X\_ No

3. Additional mitigating measures recommended?

\_ X \_\_Yes \_\_\_ No

Evaluators' Name(s): Date(s)

Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020);

Julia Mates (August 3, 2020)

\_\_Yes\_ X\_ No

3. Additional mitigating measures recommended?

\_\_X\_Yes \_\_ No

Evaluators' Name(s): Date(s)

Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020);

Julia Mates (August 3, 2020)

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic
	landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Rail Tie Wind Project

#### **Comments (See Item 2):**

#### **KOP 10 at Cheyenne Pass Road**

Segment 1 of Cheyenne Pass Road is a contributing segment of the overall linear resource, which has been determined eligible for listing in the NRHP (not indicated/assume Criterion A) as a historic territorial trail found on maps as early as 1866, running east through the town of Sherman, Wyoming, and on to Julesburg, Colorado. It is most appropriately eligible under Criterion A for its association with transportation as a historic trail in the region.

The Project would introduce tall vertical elements into the landscape setting. Given the number of wind turbines visible (one hundred twenty 3.0 MW or eighty-one 5.6 MW), the existing human-made features would likely become co-dominant features on the landscape, and the Project would attract attention and begin to dominate the landscape during the short viewing duration that the viewer would have as they travel along the highway. As such, the Project would create moderate visual contrast.

The wind turbines associated with the minimum and maximum turbine height scenarios would introduce the same level of visual contrast to the existing landscape setting. Given the taller wind turbines in the maximum turbine height scenario, more of the wind turbine structures would be visible extending above the horizon. The number of wind turbines and the motion of the rotor blades are not likely to be overlooked and may appear as a co-dominant feature. As such, the Project would create moderate visual contrast for both turbine height scenarios.

While this segment was visible on the ground in 1995, per the site records reviewed, a desktop evaluation of this trail segment did not definitively identify the segment extant on the landscape. Therefore, a follow up field visit would need to be conducted to demonstrate this Cheyenne Pass Road Overland Trail segment exhibits integrity prior to a visual impact determination being made.

#### Additional Mitigating Measures (See item 3):

Mitigation Measures are undetermined.

The current review concludes that introduction of the turbines would begin to dominate the setting of this historic property and would result in a moderate visual contrast to the existing landscape of this historic property. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project may result in an Adverse Effect on Cheyenne Pass Road. However, the location and integrity of this historic property need to be confirmed in the field. If this road segment is not extant, there would be no effect on a historic property at this location. At present the Project effect is **Undetermined**.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 1987. Wyoming Cultural Properties Form for Cheyenne Pass Road. Smithsonian Number 48AB543\_1. May 29, 1987.

KOP 10: Cheyenne Pass Road

Rail Tie Wind Project

KOP 11: Lincoln Highway 1920

			PROJECT IN	IFORMATION	J						
CR KC	OP 11: Lincoln Highw	vay 1920		Reviewers Name: S. Brooks							
Distar	nce to Nearest Turbir	ne (Min/Max): 8.4/8.5	miles	Date: 7/30/2020							
Latitu	<b>d</b> e: 41.1007 ° N			Longitude:105.2317 ° W							
Angle	of Observation:			Visibility:							
	Level $\square$	Inferior 🗵	Superior $\square$		⟨Partially/	Backdropped [	□ Skylined □				
Typo	of Hear:	Vicual Concitivity		Completely)							
Travel	of User:	Visual Sensitivity: User Expectation:	Duration of \	liour	Use Volum	0.	Overall Sensitivity:				
Havei	lei S	Moderate	Low	new.	Moderate	ᡛ.	Moderate (travelers)				
		moderate	2011		Moderate		moderate (indicator)				
Has a	Photo Simulation Be			⊠ No		ure Number:	N/A				
			ACTERISTIC LAN	IDSCAPE DE	SCRIPTIO	1					
	Land/	* * * *		egetation			Structures				
ì	Foreground (FG)/Midd	leground (MG):gently	FG/MG: irregular and rounded	nd patchy; pyran	nidal,		n, numerous; tall, simple/ arent; blocky, rectangular;				
Form	rolling Background (BG): sho	rt. linear band	BG: not discernible				, horizontal, vertical				
F		.,	2011101 41100011111210			BG: not discernible					
-	FG/MG: gently undulat BG: irregular, horizonta		FG/MG: short, irreg				rtical, horizontal, straight gular and rectangular				
Line	BG. Irregular, Horizonia	ai	DO. Hot discernible			BG: not discernible					
	FG/MG: tan, gray, sage	e green, green,	FG/MG: sage gree		ee <b>n</b>	FG/MG: light and dark brown, light and dark					
Color	reddish-brown		BG: not discernible			gray, red, black					
ပိ	BG: not discernible					BG: not discernible	e				
	FG: fine, granulated, co	narco	FG/MG: course, un	iform: clumped	ccattored	EC/MC: simple u	niform, even, ordered;				
rre	MG/BG: fine to mediun		BG: not discernible		Scallereu	medium; complex					
Texture						BG: not discernible					
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			REPRESENTATI	VE PHOTOGE	RAPH						
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Rail Tie Wind Project
Land/Water

KOP 11: Lincoln Highway 1920
Structures

		Land/Water V						Veget	Vegetation				Structures							
	Scenario 1	1	Sc	enario 2		S	cenario	1		Scenario 2			Scer	nario	<del>1</del>			Sc	enar	io 2
Form	N/A	N/A N/A			N/A			N/	A		BG: angu	short ılar	, thii	١,			G: sho ngular	rt, th	in,	
Line	N/A		N/A			N/A			N/A			BG: angu	straig ular	ght, '	vertic	al,	BG: straight, vertica angular			
Color	N/A N/A				N/A			N/A			BG:	BG: white, light gray			ıy	BG: white, light gray				
Texture	N/A N/A				N/A N/A			A		BG: fine				ВС	G: fine	,				
							CONTR	AST R	AT	ING										
	Mini	mum	Impact	Scenar	io 1						ixin	num li	mpa	ct S	cen	nario	o 2			
			Feat	ures									Fea	atur	es					
	Land/Water Vegetation					Stri	JCTURES		ſ		L	AND/WA	TER		<b>V</b> EGE	TATIC	N	Str	UCTUI	RES
ts	Moderate Strong		Strong	Moderate Weak None Strong Moderate Weak None			ts		Degree of Contrast		Moderate Weak None Strong Moderate			Weak	None Strong Moderate Weak None					
Elements	Form		X		X		X	Elements	Ī	Form			Х				x		Х	
E E	Line		X		X		X	E		Line			X			7	X		X	
	Color		X		X		Х			Color			X			7	X		X	
	Texture		X		X		Х			Texture			X			7	X		X	
	0	verall	Level of	f Contra	st: W	eak			_		Ove	rall Le	evel	of C	ontr	ast:	W	eak		
2. Does project design meet visual resource management objectives? _X_YesNo							Does project design meet visual resource management objectives?  _X Yes No													
3. Additional mitigating measures recommended?YesX_ No								tional mitigatiı sX_ No	ng n	neasur	es re	econ	nmer	nded	l?					
Evaluators' Name(s): Date(s)  Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020);								Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020);												

Vegetation

### **Contrast Rating Criteria:**

Julia Mates (August 3, 2020)

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Julia Mates (August 3, 2020)

Rail Tie Wind Project

KOP 11: Lincoln Highway 1920

Comments (See Item 2):

**KOP 11 at Lincoln Highway 1920** 

Segment 22 of the Lincoln Highway is a contributing segment of the overall linear resource, which was recommended eligible for listing in the NRHP in 1997 (not indicated/assume Criteria A/C). The 2004 Wyoming Cultural Properties Form for Segment 22 indicates this segment of the Lincoln Highway retains integrity of setting, feeling, association, and location. While its physical integrity has been subject to deterioration and it remains unclear when the last modifications to this highway occurred, it still retains integrity of design and workmanship.

The closest wind turbine would be 8.4 and 8.5 miles, respectively. Given the limited number of wind turbines visible (one 3.0 MW, or two 5.6 MW), the existing human-made features including Interstate 80, power lines, the railroad, and rural development, would continue to be dominant features on the landscape and serve to deteriorate the setting and feeling of the resource. Also, given the short duration that the viewer would have as they travel along the road, the Project would likely not attract attention and may even be overlooked in the landscape. As such, the Project would create weak visual contrast for both turbine height scenarios.

Additional Mitigating Measures (See Item 3):

No further work is recommended:

The current review concludes that views of the wind turbines are sufficiently weakened by the human-made features already present surrounding Lincoln Highway 1920 Segment 22. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and IILB.2 and II.C of the Final Draft PA, development of the Project will result in **No Adverse Effect** on the Lincoln Highway Segment 22.

#### **References Cited:**

BIM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: <a href="https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014">https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014</a>. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 2004. Wyoming Cultural Properties Form for Lincoln Highway. Smithsonian Number 48LA117\_22. September 2, 2004.

Rail Tie Wind Project

**KOP 13: Ames Monument** 

			Р	ROJECT IN	<b>IFORMATION</b>						
CR KC	OP 13: Ames Monume	ent			Reviewers N	ame: S. Bro	ooks				
Distar	ice to Nearest Turbin	e (Min/Max): 1.2/1.6	miles		Date: 7/29/2020						
Latitu	de: 41.1310 ° N				Longitude:105.3982 ° W						
Angle	of Observation:				Visibility:						
	Level □	Inferior 🗆	Supe	erior 🗵	Screened (Partially/Comp		Backdropped ☐ Skylined ⊠				
	of User:	Visual Sensitivity:									
Visitor	-	User Expectation:		Duration of V		Use Volume		Overall Sensitivity:			
Nearby	y residents	High (visitor/residen	t)	Moderate to (visitors); H (residents)	-	Low (visito residents)	rs and	High (visitors and residents)			
Has a	Photo Simulation Be	en Created for KOP	?		$\square$ No	If yes, Fig	ure Number:	See attached.			
		CHARA	CTE	RISTIC LAN	IDSCAPE DE	SCRIPTIO	N				
	Land/\				egetation			tructures			
	Foreground (FG): flat, I	evel to gently		ounded, pyran	nidal		FG: geometric; sho	ort, thin; angular and			
Form	undulation; blocky		MG/E	BG: not discerr	nible		transparent				
P	Middleground (MG): fla						MG/BG: not discer	nible			
	Background (BG): low,	-									
	FG: straight, horizontal			short, linear, irr BG: not discerr				uare/rectangular and			
Line	MG: short, thin band BG: horizontal, linear, o	rontly to moderately	NIG/E	sG: not alscerr	lible		angular; tall, thin simple; MG/BG: not discernible				
_	undulating,	genity to inoderately									
	FG: reddish-brown, tan	1	FG∙ r	nale-vellow sa	ge green, light a	nd dark	FG: white, brown, gray				
'n	MG/BG: not discernible		greer		ge green, light di	ila aark	MG/BG: not discernible				
Color			MG:								
			BG: o	lark green							
o)	FG: fine, granulated			ine, clumped,	medium		FG: fine, medium;				
Texture	MG/BG: fine		MG/E	BG: fine			MG/BG: not discernible				
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Rail Tie Wind Project

**KOP 13: Ames Monument** 

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	Scenario 1		enario 2	Scenario 1	regetat	Scenario 2	Sce	enario 1	Scenario 2						
Form	N/A N/A N/A					N	J/A	FG/MG: vertical,	tall, thin,	FG/MG: tall, thin, vertical, uniform					
Line	N/A		N/A		N/A	N	I/A	FG/MG: straight,		FG/MG: strong, straight, angular					
Color	N/A	N/A		N/A	N	I/A	FG/MG: gray	white, light	FG/MG: white, light gray						
Texture	N/A	N/A		N/A	N/A			scattered	FG: fine, scattered						
·					CONTRA	ST RA	TING	•							
	Mini	mum	Impact	Scenario 1			Max	imum Impa	act Scenar	io 2					
			Feat	ures				Fe	eatures						
Elements	Degree of Contrast  FORM LINE	Contrast S W		X MODERATE NONS	IG RATE	Elements	FORM LINE	X WEAK WEAK NOBERATE NOBERATE	X NODERATE WEAK	NONERATE NONE X NOE X NONE X NOE X NONE X NO					
	Color Texture	$\vdash$	X	X	X		Color	X	X	X					
		/erall	Level of	Contrast: Str	rong		<u> </u>	erall Level	of Contrast	: Strong					
Does project design meet visual resource management objectives?  YesX_ No						Does project design meet visual resource management objectives? YesX_ No									
3. Additional mitigating measures recommended? _ XYes No						Additional mitigating measures recommended? X_Yes No									
Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020); Julia Mates (August 3, 2020)						Evaluators' Name(s): Date(s) Shaun Brooks (July 30, 2020); Jennifer Chester (August 1, 2020); Julia Mates (August 3, 2020)									

Degree of Contrast	Rating Criteria
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
Moderate	The element contrast attracts attention and begins to dominate or appears as a co-dominant feature in the characteristic landscape.
Weak	The element contrast can be seen and may attract attention but appears subordinate in the characteristic landscape.
None	The element contrast is not visible or perceived.

Rail Tie Wind Project

KOP 13: Ames Monument

Comments (See Item 2):

**KOP 13 at Ames Monument** 

The Ames Monument was listed in the NRHP in 1972 for its association with the Ames Brothers and their role in transportation in the U.S through the construction of the transcontinental railroad. The monument itself is the work of two prominent American artists , H.H. Richardson, a prominent American architect, and Augustus Saint-Gaudens, a prominent American sculptor. The Ames Monument is a large pyramid constructed from a nearby granite source, Reed's Rock, and commemorates the highest elevation along the route of the First Transcontinental Railroad. The monument was designated as a National Historic Landmark in 2016 and is maintained as a Wyoming state historic site. The Union Pacific Railroad was relocated several miles to the south of the monument in 1901 and visual evidence of the railroad no longer exists near the site. As such, no assessment for the Union Pacific Railroad (48AB357) was conducted from KOP 13.

The Project would introduce tall vertical elements into the landscape setting. Numerous wind turbines would be visible at various distances across the full field of view, the closest wind turbines being located approximately 1 mile from the viewpoint. Visual simulations depicting both turbine height scenarios at this KOP are provided in the May 2020 VIA (Tetra Tech 2020b). Given their close proximity of the wind turbines to the viewpoint (1.2 and 1.6 miles, respectively), the turbines would appear as dominant features within the landscape. The lower portion of the structures would be backdropped by rangeland and distant mountain ranges, but the upper portions of the structures would be skylined. The white color of the wind turbines would contrast against the blue sky. Contrast would become more apparent during certain times of the day, for example during sunset when the wind turbines are backlit, and they may appear silhouetted against the sky. The motion of the wind turbine blades would also attract viewers attention. The perceived scale of the wind turbines would diminish as distance between the viewer structures increases. Wind turbines in the middleground would also be partially to mostly screened by intervening terrain in the foreground, with the exception of a small portion where the valley is visible. In this instance more of the wind turbine structures would be visible. Although other vertical human-made features (i.e., distribution line, communication tower) are visible in the foreground, the number and scale of the wind turbines visible would be much larger and become a focal point within the view. The proximity of the wind turbines scenarios to the viewpoint, (1.2 and 1.6 miles, respectively), the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape would cause the Project to appear as a dominant feature within the view. As such, the Project would introduce strong visual contrast.

Although the closest wind turbines associated with the maximum turbine height scenario are located approximately 1 mile farther away from the viewpoint than the wind turbines associated with the minimum turbine height scenario, the maximum turbine height scenario would be approximately 175 feet taller and would introduce the same level of visual contrast—to the existing landscape setting. Several wind turbines would be visible in the foreground. The close proximity of the wind turbines to the viewpoint, the introduction of vertical elements into a primarily horizontal landscape setting, the motion of the blades, and the spatial dominance within the landscape setting would cause the Project to attract attention and become a dominant feature within the view. As such, the Project would introduce strong visual contrast for both turbine height scenarios.

#### Additional Mitigating Measures (See Item 3):

Mitigation Measures are recommended.

The current review concludes that introduction of the turbines would tend to dominate the setting of the historic property and would result in a strong visual contrast to the existing landscape of the Ames Monument National Historic Landmark. Based on guidance provided in the 2014 State Protocol developed between the Wyoming SHPO and the BLM (BLM and SHPO 2014), and III.B.2 and II.C of the Final Draft PA, development of the Project will result in an **Adverse Effect** on the Ames Monument National Historic Landmark.

#### **References Cited:**

BLM and SHPO (Bureau of Land Management and State Historic Preservation Officer (SHPO). 2014. State Protocol between the Wyoming Bureau of Land Management State Director and the Wyoming State Historic Preservation Officer. Available online at: <a href="https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014">https://wyoshpo.wyo.gov/index.php/programs/review-and-consultation-s106/agreements/bureau-of-land-management-protocol-2014</a>. Accessed August 2020.

Wyoming SHPO (Wyoming State Historic Preservation Office). 1971. Wyoming Cultural Properties Form for Ames Monument. Smithsonian Number 48AB97. November 22, 1971.

Rail Tie Wind Project

**KOP 13: Ames Monument** 

Tetra Tech. 2020. Visual Impact Assessment for the Rail Tie Wind Project Albany County, Wyoming. Prepared for ConnectGen Albany County LLC. May 2020.

### **Visual Simulations**

### **KOP003 Ames Monument**

### Midday

**GE 3.0MW** 

### Simulation Data

### Photograph Information

Photo Name 200212\_DSC\_0074\_MIN\_Sim.JPG
Date of Photograph 09/25/19
Time of Photograph 12:20 PM
Latitude 41.130981°
Longitude -105.398247°
Ground Elevation + Tripod Height 2525m
Photograph Settings ISO 200 1/400sec. f/10

#### Camera Specifications

Camera Make and Model Nikon D90
Sensor Size Nikon APS-C (23.6x15.8mm)
Lens Make and Model AF-S DX NIKKOR 35mm f/1.8G
Lens Focal Length 35mm prime
35mm Equivalent Focal Length 53.55mm

#### Sun and Weather Information

Sun Angle/Azimuth	168°
Sun Elevation	47°
Weather Conditions	Partly Cloudy



Number of Turbines	149
Make and Model	GE 3.0MW
Upper Blade Tip Height	152.5m
Lower Blade Tip Height	31m
Indicative Hub Height	89m
Rotor Diameter	127m



# **Rail Tie Wind Project**



### Viewing Instructions

The single-frame simulation on the following page should be printed at 11 by 17 inches; full size with no scaling; and viewed at arm's length (24 inches).

If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at arm's length (24 inches).







### **Visual Simulations**

### **KOP003 Ames Monument**

### Midday

Vestas V162-5.6MW

### Simulation Data

### Photograph Information

Photo Name 200212\_DSC\_0074\_MIN\_Sim.JPG
Date of Photograph 09/25/19
Time of Photograph 12:20 PM
Latitude 41:30981°
Longitude -105:398247°
Ground Elevation + Tripod Height 2525m
Photograph Settings ISO 200 1/400sec. f/10

#### Camera Specifications

Camera Make and Model Nikon D90
Sensor Size Nikon APS-C (23.6x15.8mm)
Lens Make and Model AF-S DX NIKKOR 35mm f/1.8G
Lens Focal Length 35mm prime
35mm Equivalent Focal Length 53.55mm

#### Sun and Weather Information

Sun Angle/Azimuth	168°
Sun Elevation	47°
Weather Conditions	Partly Cloudy



Number of Turbines	87
Make and Model	Vestas V162-5.6MW
Upper Blade Tip Height	206m
Lower Blade Tip Height	44m
Indicative Hub Height	125m
Rotor Diameter	162m



# **Rail Tie Wind Project**



### **Viewing Instructions**

The single-frame simulation on the following page should be printed at 11 by 17 inches; full size with no scaling; and viewed at arm's length (24 inches).

If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at arm's length (24 inches).







KOPOO3 Ames Monument Midday, viewing Southwest Vestas V162-5.6MW, Maximum Turbine Height Scenario

Rail Tie Wind Project